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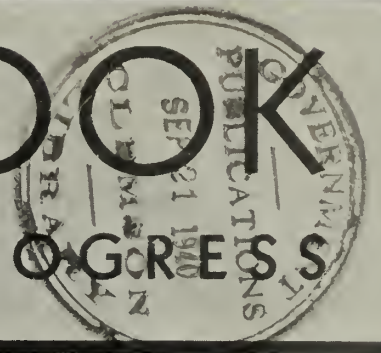



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1940 YEARBOOK

PARK AND RECREATION PROGRESS





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1940

YEARBOOK

PARK AND RECREATION PROGRESS

UNITED STATES DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE



UNITED STATES GOVERNMENT PRINTING OFFICE • WASHINGTON • 1940

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PARKS AND PEACE

IN RECENT YEARS the world has become smaller. Far places have been drawn closer together through ease and speed of transportation. We had become neighbors with the world. Now that relationship—or that illusion of relation—has been shattered, for at least a time. We cannot visit some of our erstwhile neighbors. We may only look toward them with horror and pity. We have been forced back upon ourselves.

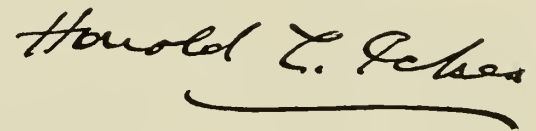
In this time of stress, tragedy, and distress for friends, it is comforting and good to find within our own borders places of beauty, space, and spiritual exhilaration. In a darkened world, the simple light of the sun, seen on free land or shining into great forests belonging to the people, is a bright torch of liberty. Never have we so needed our parks and monuments. Today, they become anew affirmations of our democracy, breathing spaces in a world shadowed by hate and made terrible by inhumanity to man.

In the wilderness beauties of our national parks and the historic shrines of our national monuments, we have living pictures of the great past of our country, landmarks to show the road we have traveled and to point out the path that leads into the future. In these areas and in the growing numbers of State, county, and municipal parks throughout the Nation, we give our people unique and happy fortifications against unrest and war. The well-being of

useful communities, equipped for play, rest, and recreation as well as work, is one guarantee of America's safety for the future.

The supervision of the National Park Service is one of the rewarding tasks of the Secretary of the Interior and it has been interesting and inspiring to extend the application of its democratic policies and intelligent planning to the States in their park programs. One cannot but be pleased and heartened by the record of our last 12 months' progress as reported in this yearbook—new parks, new ideas, new thousands of our citizens benefited. Even beyond that, I am struck by America's great, good fortune in having a need for such a report; in having parks to be reported upon in every State that provide elbowroom for our citizens.

It seems to me that our park program, sponsored by Federal and State Governments, is a program of peace, protecting and conserving both our natural and human resources. I am happy to have a part in it.

A handwritten signature in dark ink, reading "Harold L. Ickes". The signature is written in a cursive style with a long horizontal flourish underneath the name.

Secretary of the Interior.

INTRODUCTION

IN PRESENTING the 1940 Yearbook—Park and Recreation Progress—the National Park Service feels that substantial progress has been made in carrying out the purpose, set forth last year by Secretary of the Interior Harold L. Ickes, of conducting a forum for the expression of progressive thought on parks and recreational conservation and development.

We have observed that purpose by increasing both the number of contributors from outside the Government Service and the variety of the subject matter discussed. In some instances the views of two or more individuals on the same or similar subjects are presented, in order to develop well rounded and stimulating treatment.

The hope is expressed again that persons actually engaged in park and recreation work, and those with a civic interest in this field, will continue to regard the Yearbook as a clearing house or meeting ground for the exchange of ideas and information. It is hoped that voluntary suggestions and contributions may be received throughout the year on all subjects related to this work in order that the Yearbook will grow more and more representative, both in name and content, of the program in the interest of which it is published.

ARNO B. CAMMERER,
Director, National Park Service.

THE MEANING OF PARKS AND RECREATION

by CONRAD L. WIRTH, *Supervisor of Recreation and Land Planning, National Park Service*

RECREATION, as applied in this country to parks and areas set aside for intensive recreational use, is an absolute necessity in the social structure of the Nation. Recreation can be defined best as the use of leisure time—leisure time being that time in our lives not needed for eating and sleeping, or earning a living in business, agriculture, or industry.

In a nation, people must live together in a happy, contented manner—first as individuals, then in family groups, small villages, towns, cities, counties and States, and ultimately as one people. It should be realized that a lot of research and theory have been advanced on the problem of social betterment—if you wish to call it that. Much of it has been theory, and much of this theory has been drawn out to a point where it becomes rather thin and almost cloudlike in texture. In some instances it has become commercialized to such an extent, in an effort to become self-supporting, that the people most in need of recreation are deprived of the use of the areas set aside for them.

The supplying of some form of recreation and enjoyment of the out-of-doors to all persons has sometimes been attacked as a procedure bordering on Communism. As a citizen of a democratic nation, I feel that a person who advances the theory of providing recreation for all need not be classed as one who believes that the individual should be removed from consideration and that all should share and share alike. We should always bear in mind that a democratic nation is based primarily on the family structure. If an individual, for instance, goes astray, the chances are nine to one that, if the family is a good one, the rest of its members will do everything in their power to bring the wayward one back into the fold and assist him in enjoying the old associations. This is purely the bringing together of people for unity and strength, for self-protection, for comfort in the thought that others of their kin have been made happy through their efforts, and a feeling on each individual's part that if misfortune should befall him, he would be helped along in the same way. Throughout the history of this country we have seen the fortunes and misfortunes of individuals—the rise of men to

great heights followed by their drop into the depths of despair and poverty through some turn of fate. We have even seen Presidents of the United States, after holding the highest office the Nation can bestow upon an individual, reduced to economic straits. Yet, no matter what his worldly wealth may be, due to his individual ability to obtain it, an individual should always find comfort in the fact that there are certain public or national family holdings such as parks and recreation areas that will provide comfort at leisure times.

Perhaps the statements in this article might be criticized by some as being too much "up in the air." I hope not. To me, at least, they are not. I am trying to bring forth a basic principle: the challenge that if you take away the curtain of mystery, theory, and the cold business facts of self-supporting park systems, you still have the objective clearly before you—the responsibility of a democratic country such as ours to preserve its human wealth. You still have before you the indisputable fact that every individual is an important social entity in our Nation and that care of this individual's leisure time in a healthful and enjoyable way, or the conservation of human wealth, is a national family problem.

Our Constitution guarantees everyone life, liberty, and the pursuit of happiness. I am positive that those who drew up that document had in mind the idea that people should always have the right to enjoy themselves, and that no one should ever be given the privilege of buying out, through his skill in accumulating worldly wealth, all of the lands and waters, the forests and the mountains, for his own private use, thus depriving the rest of the people of their privilege to use them. An adequate amount of these resources must be set aside for the use of all the people. That is fundamental in our conception of government and society. It is an ownership that goes with citizenship. It is the duty of the park and recreational systems of this Nation to provide the necessary areas and leadership so as to make the "pursuit of happiness" possible for all the people no matter in what walk of life he or she may be.

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Beginning with this edition, the Yearbook will carry in its title the year in which it is published. This will explain the discrepancy of dates in the series. Three consecutive editions of the Yearbook have now been published: 1937, 1938, and 1940.

Opinions expressed in articles contained in this Yearbook are those of the authors and are not necessarily concurred in by the Department of the Interior.

THE YEAR'S PROGRESS

Compiled by JAMES F. KIELEY, *Associate Recreational Planner, National Park Service.*

SUBSTANTIAL PROGRESS in the Federal field and on scores of State and local fronts gave continued impetus to the park and recreation movement throughout the United States during the year ending September 30, 1939. Gains won in previous years through the growing effectiveness of correlated action were consolidated by many important legislative and administrative steps, signifying a definite strengthening of the Nation-wide concept of joint interest and responsibility in providing for the recreational needs of the American people. Beyond this, new notes of progress were sounded in various parts of the country in the establishment and extension of areas and facilities, reorganization of administrative processes, and development of programs.

In the Federal field, the National Park Service continued its supervision of Civilian Conservation Corps and emergency relief forces and broadened the scope of its consulting and coordinating participation in the national movement. Several new areas were established in the national park system, and important steps were gained with legislation authorizing others.

A plan of assembling and tabulating complete information on the status and administration of State park systems, instituted with the endorsement of the National Conference on State Parks and carried out with the cooperation of the States, will provide much needed data to all agencies operating park and recreation areas and programs. This information will be kept up to date from year to year by the National Park Service and will make available for the first time a comprehensive and dependable basis for comparison of activities by which all bodies responsible for park systems may gauge their policies and programs. Although these reports were not complete when the Year-book went to press, tabulations of returns received up to that time appear in this issue.

Another important aid to park administrators is the National Park Service report on "Fees and Charges for Public Recreation—A Study of Policies and Practices," compiled from a study made at the request of the American Institute of Park Executives and presented to that organization at its annual meeting in September. The report was published in printed form and is available from the Superintendent of Documents, Government Printing Office, at 40 cents a copy. It makes no recommendations on the controversial issue of levying entrance fees or making charges for park accommodations and services, but presents the findings of a study in which 238 park administering agencies, representing 201 Government units in all parts of the United States, cooperated. These data are

embodied in 8 chapters of explanatory text, 18 tables, and 4 charts giving graphic interpretation of the material collected in the study. The 58-page report represents the first attempt to assemble information on this question on a Nation-wide scale.

State chapters of the American Planning and Civic Association were organized in New Mexico and Arizona during the year. It is expected the program and policies of this organization in support of park and recreational developments will have material effect in both States.

CCC and Emergency Activities

In the sixth year of its far-reaching conservation program, the Civilian Conservation Corps continued to be a major factor in the protection and development of park and recreation areas of all types in all parts of the land. During the year the National Park Service, in its technical supervision of these operations, cooperated with 109 different State, county, and metropolitan park administering agencies in whose jurisdictions 237 camps were at work on 423 areas totaling 1,040,342 acres. Of these, 308 were State parks totaling 865,312 acres, administered by 71 different agencies. In county park work, on which 26 camps were employed, there were 15 agencies cooperating in projects on 70 areas of 83,156 acres. Twenty-one camps were at work on 45 metropolitan parks totaling 91,874 acres, administered by 23 different agencies.

A total of \$17,559,746 of CCC and Emergency Relief Act funds was expended through the National Park Service during the year. This included \$6,928,251 from CCC allocations for State, county and metropolitan park work supervised by the Service in cooperation with local administering agencies. In addition, \$2,609,015 of CCC funds were expended for national park and monument projects, and \$5,470,905 of ERA funds went into the development of the 42 Federal recreational demonstration areas in 22 States, besides \$2,551,575 spent on Federal projects in the Cape Hatteras Proposed National Seashore, North Carolina, and in national parks and monuments. (CCC expenditures represent the money expended through the National Park Service on development projects and do not include funds spent through other agencies for maintenance of the camps, enrollees, etc.)

The following table shows by States the distribution of CCC funds expended on State, county, and metropolitan park projects, and ERA funds on recreational demonstration areas:

State	CCC	ERA on recreational demonstration areas
Alabama	\$208,787	\$143,112
Arizona	94,756	
Arkansas	138,629	
California	322,297	228,883
Colorado	72,439	
Florida	218,252	
Georgia	135,498	185,793
Idaho	30,565	
Illinois	595,358	85,937
Indiana	202,295	289,186
Iowa	172,116	
Kansas	36,383	
Kentucky	82,646	98,728
Louisiana	58,989	
Maine	33,502	100,360
Maryland	71,416	164,858
Massachusetts	262,017	
Michigan	188,695	642,173
Minnesota	149,350	137,394
Mississippi	159,781	
Missouri	225,321	521,838
Montana	30,027	
New Hampshire	51,581	105,613
New Jersey	175,139	
New Mexico	64,580	67,059
New York	550,507	
North Carolina	94,129	373,968
North Dakota	74,722	84,912
Ohio	140,624	
Oklahoma	267,482	101,421
Oregon	116,529	203,946
Pennsylvania	144,781	771,405
Rhode Island	54,375	130,739
South Carolina	154,291	253,529
South Dakota	61,434	
Tennessee	210,932	416,794
Texas	459,421	
Utah	29,826	
Vermont	86,188	
Virginia	236,803	363,257
Washington	106,081	
West Virginia	120,622	
Wisconsin	210,711	
Wyoming	28,374	
Total	6,928,251	5,470,905

CCC operations went forward on a wide and varied scale for the conservation of areas and to provide necessary facilities for the increasing numbers of park users. The following table shows some of the most important accomplishments on different types of areas throughout the country:

	Unit	National parks and monuments	State, county, and metropolitan parks	Recreational demonstration areas	Total
Foot and horse bridges	Number	1	45		46
Bathhouses	do	2	12	2	16
Overnight cabins	do		146	24	170
Combination buildings	do		34	3	37
Lodges and museums	do	1	8	2	11
Lookout towers	do		3	2	5
Other buildings	do	36	134	10	180
Impounding and large diversion dams	do	2	18	1	21
Camp stoves and fireplaces	do	128	1,556		1,684
Signs, markers, and monuments	do	5,036	5,087	547	10,670
Table and bench combinations	do	385	3,269	228	3,882

	Unit	National parks and monuments	State, county and metropolitan parks	Recreational demonstration areas	Total
Foot trails	Miles	26.4	108.9	20.2	155.5
Fighting forest fires	Man-days	35,512	37,809	551	73,872
Beach improvements	Acres	221.5	209.2	8.5	439.2
Parking areas and overlooks	Square yards	31,498	645,263	28,822	705,583
Public campground development	Acres	61.1	253.6		314.7
Public picnic ground development	do	5.3	305	278	588.3
Fish rearing ponds	Number	22	31		53
Stocking fish	do	1,319,958	126,328	7,527	1,453,813
Education, guide, and contact station work	Man-days	71,368	31,410	4,628	107,406

Work financed by Emergency Relief Act appropriations also accounted for notable advances in development projects on Federal areas. In the table below are given some of the important accomplishments by ERA forces for the fiscal year July 1, 1938 to June 30, 1939:

	Unit	Recreational demonstration areas	National parks and monuments	Total
Foot and horse bridges	Number	10	1	11
Bathhouses	do	8		8
Cabins	do	345		345
Combination buildings	do	18	1	19
Lodges	do	38		38
Museums	do	1	1	2
Lookouts	do	1		1
Other buildings	do	143	9	152
Impounding dams	do	12		12
Signs and markers	do	2,728	438	3,166
Table and bench combinations	do	880	154	1,034
Foot trails	Miles	76.13	17.5	93.63
Stoves and fireplaces	Number	301	61	362
Fighting fires	Man-boats	896	168	1,064
Beach improvement	Acres	49.4	2	51.4
Parking areas and overlooks	Square yards	294,362	10,550	304,912
Public campground development	Acres	397		397
Public picnic ground development	do	129.5	80	209.5
Fish rearing ponds	Number	20		20
Education, guide, and contact work	Man-days	374	12,864	13,238

Park, Parkway, and Recreational-Area Study

Progress of the Park, Parkway, and Recreational-Area Study, authorized by Congress in 1936, is indicated on the map of the United States on page 3. Preliminary reports have been completed in Alabama, Connecticut, Idaho, Kentucky, Minnesota, Missouri, North Dakota, Oklahoma, Oregon, Rhode Island, South Carolina, and Utah, bringing to 23 the total finished to date. It was expected that 12 other States would complete their preliminary reports by January 1, 1940.

An important note of progress in the study will be the publication by the National Park Service, early in 1940, of the first edition of a national report, for which material was rapidly nearing completion at the time the Yearbook went to press.

Other phases of the study also showed noteworthy progress. During the year the National Park Service signed agreements with agencies administering lands in 14 of the 15 States through which the Appalachian Trail passes, similar to the agreement reached with the United States Forest Service in 1938 when a protective strip was established along 546 miles of the trail for its protection.

Santa Rosa Island, off the Gulf Coast of Florida near Pensacola, was established as a National Monument by Proclamation of the President May 17, 1939.

(National Park Service Photo.)



Philadelphia Customs House National Historic Site became a unit of the National Park System by designation by the Secretary of the Interior May 26, 1939. At left is a view of the old structure.

The picturesque Badlands of South Dakota are now contained within Badlands National Monument, established by Presidential Proclamation January 25, 1939.

(National Park Service Photo.)



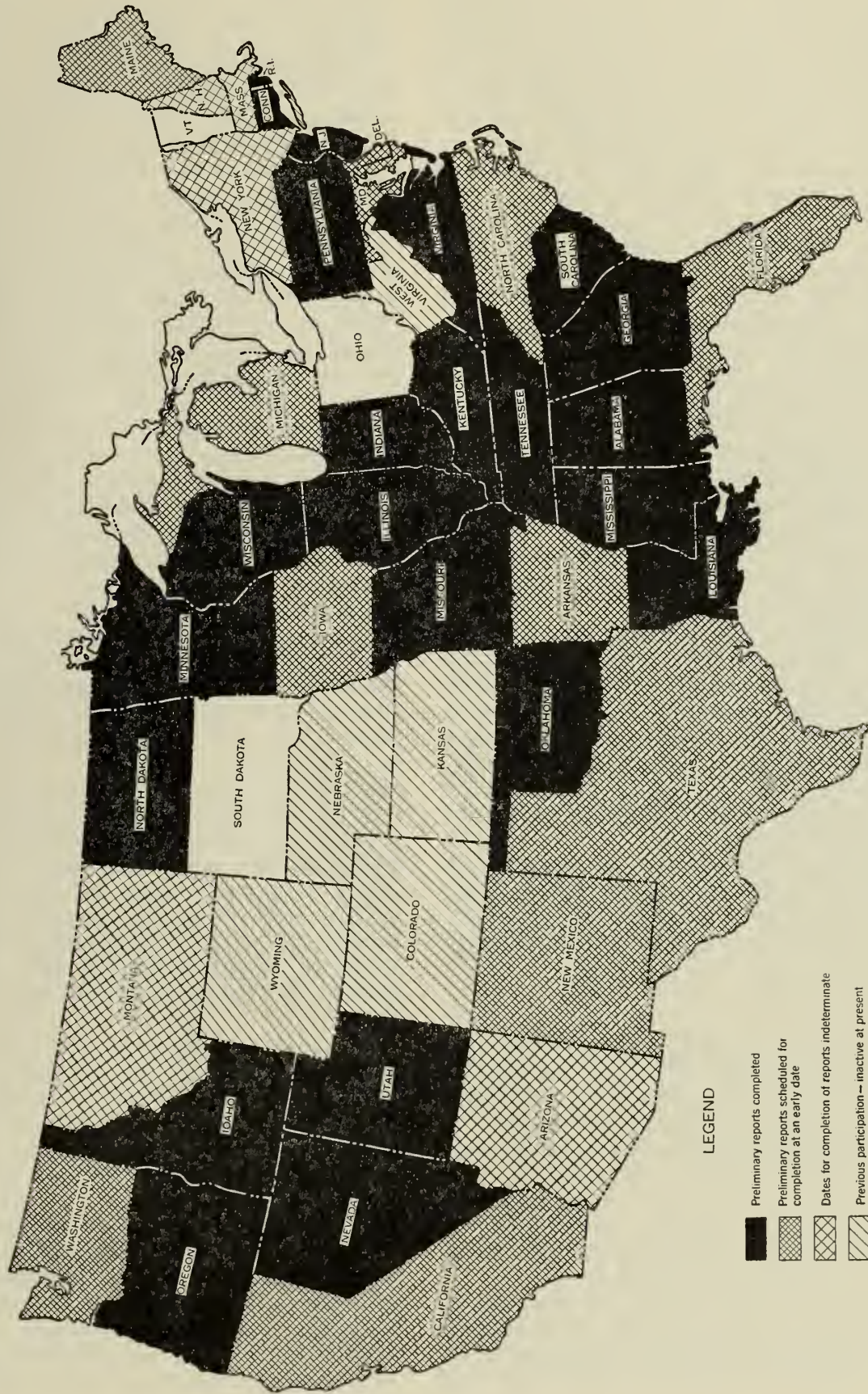


One of the important restoration projects of the National Park Service will preserve Derby Wharf (upper left). On the right is a view of the entrance to ancient Richard Derby House, also included in Salem Maritime National Historic Site, Massachusetts. The Statue of Liberty (lower left) received extensive interior renovation, including installation of new elevator facilities. Restoration of the Ford Mansion in Morristown National Historical Park, New Jersey (lower right), which served as Washington's Headquarters, is also under way. *(National Park Service Photos.)*

THE PARK, PARKWAY, AND RECREATIONAL-AREA STUDY

STATUS OF STATE COOPERATION AND COMPLETION OF PRELIMINARY REPORTS

SEPTEMBER 30, 1939



LEGEND

- Preliminary reports completed
- Preliminary reports scheduled for completion at an early date
- Dates for completion of reports indeterminate
- Previous participation -- inactive at present
- No participation

An organized camp survey is nearing completion in several States, and special reports covering camping organizations and facilities have been prepared in Ohio and South Carolina. A digest of Federal and State laws affecting organized camping was completed and published.

Tabulation and analysis of data obtained through the park use study of 1938 is nearing completion and it is expected a report will be available in 1940. This study covers attendance, travel distances, use of facilities, and habits and interests of patrons. In the summer of 1939 similar studies were made by State and local agencies in 76 parks in 17 States where such information had not been obtained satisfactorily before.

At the request of the States, the National Park Service has made recommendations for park legislation in Alabama, Florida, Missouri, and Montana.

Arrangements were made with the Work Projects Administration whereby the National Park Service reviews all WPA recreational project applications for work on national, State, county, and metropolitan parks. These reviews are made from the standpoints of the need for the proposed facilities, conformity with sound planning policies, and ability of the sponsoring agency to administer and maintain the developments. Review of municipal park project applications is not undertaken because of insufficient personnel for such work.

Similar arrangements had previously been made for review and criticism of all Work Projects Administration and Public Works Administration projects of an historical character, from the standpoints of basic soundness of all historical, restoration, and preservation work undertaken by the Federal Government. In the field of archeology the Service bears a like responsibility jointly with the Smithsonian Institution for all archeological projects undertaken with Federal emergency funds.

Arrangements were also made with the General Land Office whereby the Service reviews all applications for the purchase or lease of public domain for recreational purposes, under provision of the act of June 14, 1926 (44 Stat. 741) and the act of June 1, 1938 (52 Stat. 609).

National Park System

Several new national monuments and historic sites were established during the year, and progress was made on projects authorized but not yet consummated. Extension of several areas was effected by adding new acreage.

Badlands National Monument, South Dakota, was established by Presidential Proclamation of January 25, 1939. It contains some of the most important and spectacular badlands features in the world. An act of Congress of June 26, 1936, authorized extension of the monument to include a total of not more than 250,000 acres.

The boundaries of Homestead National Monument of America, Nebraska, were designated by the Secretary of the Interior on February 3, 1939, after the necessary lands had been acquired by the Federal Government. This

monument includes the first homestead entered under the General Homestead Act approved by President Lincoln on May 20, 1862, and it is being administered as a memorial emblematic of the hardships of pioneer life.

Santa Rosa Island National Monument, a barrier island off the Gulf coast of Florida, near Pensacola, 44 miles long and from one-eighth to one-half mile wide, was established by Presidential Proclamation of May 17, 1939. The island, whose history dates back to 1696 under the flags of five nations, is a long, narrow strip of white sand which has distinct recreational value as well as historical significance.

Tuzigoot National Monument, Arizona, was established by Presidential Proclamation of July 25, 1939. This area, consisting of 43 acres donated to the Government by School District No. 29, Yavapai County, contains the famous Tuzigoot Ruins, a rambling pueblo group of several units which was occupied for several centuries by varying populations.

Presidential Proclamation of October 25, 1938, established Ackia Battleground National Monument, Mississippi, which includes the site of Chickasaw Village where the victory over the French by the British with their Indian allies, in 1736, prevented the spread of French territorial claims east of the Mississippi River and later resulted in considerable territory being claimed by the colonies after their separation from Great Britain.

Establishment of Chalmette National Historical Park near New Orleans, which will embrace Chalmette National Monument and Grounds, Chalmette Cemetery and other lands on which the famous battle of New Orleans was fought in 1815, was authorized by an act of Congress of August 10, 1939.

Because of its historical significance, the old Customs House at Philadelphia was designated as Philadelphia Customs House National Historic Site by the Secretary of the Interior on May 26, 1939, under authority of the Historic Sites Act of August 21, 1935. The building, regarded as an outstanding example of Greek revival architecture in America, was completed in 1824 and occupied by the Customs Service from 1845 to 1934. It was originally occupied by the Second Bank of the United States.

The site of Federal Hall in New York City, where George Washington took his first oath as President of the United States, and where the first Congress convened and adopted the Bill of Rights, was declared a national historic site on May 26, 1939, by the Secretary of the Interior under authority of the Historic Sites Act. The Subtreasury Building now occupies this site.

Acquisition of one remaining tract, which is expected within the next few months, will make possible establishment of Appomattox Court House National Historical Monument in Virginia under an act of August 13, 1935. The Interior Department Appropriation Act for the fiscal year 1940 authorized the use of not more than \$8,000 for the acquisition of a small tract of land near the center of

the proposed monument. Other necessary lands have been acquired and transferred to the Department of the Interior from the Department of Agriculture.

A proclamation by the President on February 3, 1939, based on the act of May 4, 1930, added approximately 39,000 acres to Carlsbad Caverns National Park, New Mexico. The extension includes Slaughter Canyon where nearly a score of caves have been discovered, some of which contain important archeological data and artifacts.

Thirty thousand acres were added to Arches National Monument, Utah, under a proclamation signed by the President on November 25, 1938. The enlarged monument consolidates two previously existing units and includes many additional outstanding objects of geological interest.

Addition of the property formerly known as Jessup's Mill to Glacier National Park, Montana, for establishment of a fish hatchery, was authorized in the act of July 31, 1939. Half a million fish a year will be hatched there and distributed among the streams of the park for the benefit of fishermen.

The addition to Petersburg National Military Park, Virginia, of portions of the Camp Lee Military Reservation, consisting of 56.67 acres, was authorized by the act of February 25, 1939, and accomplished by transfer from the Secretary of War.

The act of June 13, 1939, transferred approximately 977 acres of the Front Royal Quartermaster Depot Military Reservation to Shenandoah National Park, Virginia. Lands near the northern end of the park had been used by the Quartermaster Corps of the United States Army for stock raising purposes, but were no longer needed by the Army.

Presidential Proclamation of June 29, 1939, added approximately 195 acres to the 5 acres which was set aside as Big Hole Battlefield National Monument, to preserve the battleground where United States soldiers defeated Chief Joseph and his Nez Percé Indians in August 1877. This victory cleared the Northwest territory for white settlers.

The President's Proclamation of April 18, 1939, extended Glacier Bay National Monument, Alaska, from 1,820 square miles to 3,850 square miles, including additional extensive glaciers. This extends the boundaries of the monument from the Canadian border to a 3-mile strip off the seacoast and includes the glacial and mountain area between Glacier Bay and the ocean, providing a sanctuary for native wildlife, especially several species of the Alaskan brown bear.

Progress in land acquisition is bringing several other important projects close to consummation. One of these is Saratoga National Historical Park, New York, authorized by approval of the President on June 1, 1938, for establishment when certain lands, including the present State park area, are vested in the United States. The State of New York has agreed to transfer the State park, consisting of about 900 acres, to the Federal Government for administration pending acquisition of the remaining lands.

An act of the Texas Legislature, approved May 12, 1939, authorized transfer of State school lands within the proposed Big Bend National Park area to the State parks board, and provided for transfer of all State lands within the area to the Federal Government. Establishment of Big Bend was authorized by the act of Congress of June 20, 1935, when and if title to all lands within the area designated by the Secretary of the Interior become vested in the United States. Leading citizens of Texas are conducting a campaign to raise approximately \$1,500,000 through private subscription for purchase of the remaining needed lands. The park will consist of approximately 788,000 acres.

The State of North Carolina has undertaken to acquire private lands necessary for inclusion within the proposed Cape Hatteras National Seashore under the terms of the act of August 17, 1937. A special park commission was established by the State to handle acquisition of these lands under an appropriation of \$10,000 a year for the next 2 years.

The Secretary of the Interior has requested the Bureau of Biological Survey to devise suitable measures for wildlife protection in the Everglades National Park Project Area, Florida, pending establishment of the park. The proposed park will comprise 1,454,000 acres.

By the act of June 26, 1936, the Secretary of the Interior was authorized to accept, on behalf of the United States, lands on McQueens and Tybee Islands, Georgia, as part of Fort Pulaski National Monument. Evidence of title submitted by the State of Georgia covering McQueens Island is now being examined by the Solicitor of the Department prior to acceptance on behalf of the Federal Government.

The State of Virginia, through its conservation commission, has acquired the lands necessary for establishment of Richmond National Battlefield Park in accordance with the act of March 2, 1936. Only a few details relating to land description are delaying submission of deeds transferring these lands to the Federal Government. The park will include the most important Civil War battlefields near Richmond relating to the siege of that city by Federal forces.

Under an act of June 29, 1936, the Secretary of the Interior was directed to acquire the site of the Indian Mission established in the State of Washington in 1836 by Marcus Whitman, for establishment as Whitman National Monument. The Solicitor of the Department is examining evidence of title before the acceptance on behalf of the United States of deeds to lands which are being donated by the Whitman Centennial Corporation and the Walla Walla Foundation.

The designations of two national areas were changed by an act of Congress of August 11, 1939. Abraham Lincoln National Park, Kentucky, was redesignated as Abraham Lincoln National Historical Park, and Fort McHenry National Park, Maryland, was redesignated as Fort McHenry National Monument and Historic Shrine. In the latter area American forces successfully turned back

the British attack of September 13 and 14, 1814, and inspired Francis Scott Key to write "The Star Spangled Banner."

The status of other proposed areas will depend upon legislative action, and studies now being made by the National Park Service. The bill (H. R. 3794) introduced by Representative Bertrand W. Gearhart of California to establish Kings Canyon National Park was passed by the House of Representatives. It was expected the Senate would consider similar legislation during its regular session beginning in January 1940.

The Department has been conducting its study of proposed additions to Olympic National Park, Washington, in accordance with the act of Congress which authorized establishment of the park.

Both Olympic National Park and the proposed Kings Canyon National Park are discussed in a separate article in this edition of the Yearbook.

Action on the proposal to establish Escalante National Monument along the Colorado River between Moab, Utah, and the Arizona State line has been deferred pending further study of the full resources of the area at the request of Governor Blood of Utah.

The State of New Mexico has appropriated \$12,000 for the purchase of private lands of Indian allotments within an area near Gallup, close to the Arizona State line, which has been proposed for establishment as Manuelito National Monument. The monument would preserve a group of prehistoric ruins representing a wide range of cultures in the Southwest, including pueblos and pictographs.

For a number of years the National Park Service has been urged to study the Cascade Range in the State of Washington to determine what areas, if any, are suitable for inclusion in the national park system. The Washington State Planning Council, the United States Forest Service, and the National Park Service are now conducting the study jointly. No recommendations have as yet been made.

In connection with the proposal to establish a national park to include the present Wind Cave National Park, Custer State Park, and certain other sections of the Black Hills of South Dakota, the State legislature passed a bill authorizing transfer of the Custer area to the National Park Service provided it was requested by the Federal Government. The proposal has not as yet gone beyond preliminary investigations. Public use development in Custer State Park by the CCC under supervision of the National Park Service in cooperation with State authorities has been in progress for the last 6 years.

State, County and Metropolitan Systems

Eight States increased their park holdings during the year through transfer of areas to their jurisdictions from the Soil Conservation Service under long-term leases. With one exception, these substantial acreages are in the South.

Four such areas went under administration of the State Park Commission in Maine. They are: Mount Blue, Center

Hill and Welt Area, 4,575 acres; Lake St. George and Frye Mountain Area, 2,587 acres, Sebago Lake Area, 1,296 acres; and Bradbury Mountain Area, 172 acres.

Thirteen thousand acres of the Plantation Piedmont Project of the Soil Conservation Service were transferred to the State of Georgia. Recreational developments already carried out on these lands include facilities for swimming, boating, fishing, picnicking, and hiking. The Coastal Flatwood Project, involving approximately 32,000 acres, has also been transferred to the State, and recreational developments there cover approximately 220 acres where facilities for swimming, fishing, boating and picnicking have been provided.

The Pea River Land Utilization Project of 31,327 acres, situated in Dale and Coffee Counties, was transferred to the Alabama State Division of Forestry. Three small recreational areas have been developed there, and a large lake and other facilities are planned.

North Carolina took over the Jones and Salters Lake Development Project and the Sandhills Development Project. Six hundred and five acres of the Sandhills Project have been developed for recreational use, as have 914 acres of the Jones and Salters Project where the Jones Lake section is reserved for Negro recreation and the Singletary Lake section for whites. Jones Lake is the first State recreational area for Negroes in North Carolina.

In South Carolina the Sand Hills and Poinsett Cooperative Land Use Projects were transferred to the State Commission of Forestry for administration. The former involves 51,196 acres, and the latter, 28,717. Recreational areas for Negroes have been developed on both tracts.

Four land utilization projects of the Soil Conservation Service were transferred to the State of Tennessee for administration by the Department of Conservation: Chickasaw Forest, 11,000 acres; Natchez Trace, 40,000; Lebanon Cedar Forest, 8,300; and Standing Stone Forest. A portion of each has been developed for recreational use under administration by the Division of State Parks.

The Pensacola Cooperative Land Use Project was leased to the Florida Forest and Park Service.

The Forestry Department of Maryland now has charge of two land use adjustment areas for both recreation and forestry purposes. One of these, the Garrett County Project, consisting of 33,835 acres in the mountains of western Maryland, has facilities for swimming, boating, picnicking and group camping, and because of its favorable location is being considered for the development of an extensive winter sports program. The other, the Eastern Shore Project, contains 8,888 acres.

Other park acreage increases have also been reported. These include 1,700 acres added to Redwood Regional Park in California, and 1,380 acres added to the Oregon State parks.

Illinois has acquired 1,290 acres near Danville, Vermilion County, for a new area to be known as Kickapoo State Park.

The Pennsylvania State Legislature passed a bill authorizing the Department of Forests and Waters to acquire the Lehigh Coal and Navigation Company's canal which parallels the Delaware River from Easton to Morrisville. This 60-mile waterway, to be known as Delaware Valley State Park, will connect several existing and proposed parks and will provide picnicking, fishing, boating, and hiking. It is also of historical significance.

In the South, Mississippi increased Tishomingo State Park from 980 to 1,800 acres, and a small area for Negroes was developed on Patterson Lake in the Northeast Mississippi Development Project of the Soil Conservation Service. Another addition to the Mississippi park system is Magnolia State Park, comprising 230 acres on the Gulf in Jackson County.

Georgia added several new areas to its State park system: Magnolia Springs, 1,100 acres, in Jenkins County; Sitton's Gulch, a scenic area of 1,390 acres in Dade County; Kolomoki Mounds, an outstanding archeological site of 1,037 acres in Early County; and Miona Springs, 800 acres, in Macon County. Georgia also acquired its third county reservation, St. Mary's Natural Resources Reservation of 1,000 acres in Charlton County.

Hunting Island State Park, South Carolina, was increased to 6,111 acres with facilities for both whites and Negroes.

In Tennessee, two new parks are being developed for whites: Harrison Bay, 1,235 acres, on the new Chickamauga Reservoir constructed by the Tennessee Valley Authority near Chattanooga, and Franklin Park, comprising 2,500 acres of lands near Bristol.

Two hundred and seventy acres near Fort Lauderdale were given to Florida for a new area to be known as Pan American State Park. The donor is Robert Hayes Gore, former governor of Puerto Rico. In addition, the Overseas Road and Toll Bridge District Commission, which controls 44.5 miles of the Overseas Highway from the mainland to Key West, voted to reserve certain lands under its jurisdiction for public park and recreation purposes. It is generally agreed that this area is unique in the United States because of its scenic, wildlife, botanical, and other natural features and resources which are important in a varied recreational program. A CCC company has been assigned to this district under National Park Service supervision for the development of areas and facilities suitable for boating, swimming, fishing, camping, picnicking, parking and other activities.

In Missouri, land acquisition has included Crowder State Park and important additions to Gen. John J. Pershing and Mark Twain State Parks.

An important county park acquisition note is the approval given by the Illinois State Legislature to the Cook County Forest Preserve Commissioners to add 5,000 acres to the 35,000-acre Forest Preserve District system.

Bedford County Park of 102 acres near Bedford, Virginia, is another new county area. It is being developed by the CCC for swimming and picnicking.

Two metropolitan park areas were established in Texas. In July 1939 the city of Austin purchased an area of 1,008 acres on Lake Austin for a municipal summer camp and other recreational purposes. This area will be planned and developed with the help of the National Park Service and the CCC. Eagle Mountain Lake, a 20-mile stretch of water with excellent possibilities as a recreational area, is being developed by the Fort Worth Water Board in co-operation with the National Park Service and the CCC. A large day use area will be developed for swimming and picnicking, and facilities for group camping are being considered for construction in the near future.

The 1939 legislature in New Mexico appropriated \$250,000 for purchase of lands for State park purposes. A new State park is to be developed at Bluewater Lake in the arid west central portion of the State where excellent fishing and other recreational facilities will be provided.

More than 2,000 acres have been added to Devil's Den State Park in Arkansas by the Department of Agriculture through a 50-year lease. This land, purchased by the Resettlement Administration, surrounds the area belonging to the State. Also, in Arkansas, Buffalo River State Park was increased from 1,215 to 1,730 acres, and 48 acres were added to Petit Jean State Park.

Baxter State Park, Maine, was increased by an additional gift of 12,000 acres from its founder, Percival P. Baxter.

Parkways

A bill to authorize a National Mississippi River Parkway, introduced in both houses of the Seventy-sixth Congress, First Session, is still pending. It would authorize the Secretary of the Interior to make Surveys and prepare maps for the location and development of a national parkway following the general course of the Mississippi River from its source in Itasca State Park, Minnesota, to the Gulf of Mexico. The measure is important not only for the length and scope of the parkway proposed, but also because it marks the first time that parkway principles have been set down in a congressional bill.

The following States passed legislation authorizing acquisition of land and other participation in this proposed project: Illinois, Wisconsin, Missouri, and Arkansas.

Sixty miles of the Blue Ridge Parkway were completed with bituminous surfacing and an additional 38 miles graded and surfaced with stone in North Carolina during the year, making a total of 98 miles of the parkway open to traffic in that State. In Virginia, the road over 55 miles of the Blue Ridge Parkway was completed and opened to the public.

The right-of-way for 45 miles of the Natchez Trace Parkway has been acquired by the State of Mississippi and turned over to the Federal Government. Thirty-four miles have been graded and are under contract for surfacing, and 11 miles are under contract for grading.

Other Developments

Important development projects facilitating the use of areas were completed or well advanced during the year.

In Rocky Mountain National Park, Colorado, the new Timber Creek Campground was nearly completed. This is the first campground to be constructed on the west side of the park and is an important addition from the standpoint of motorists.

Construction of a new campground in the Old Faithful area was begun in Yellowstone National Park, Wyoming. A new lookout platform has been completed in the Canyon area, and the Mount Washburn lookout tower is being reconstructed. Important water, sewer, and electric service are being installed in several areas, and three secondary fire lookouts are under construction. The park operators have begun a park-wide cabin improvement program, on which actual work has been started in the Old Faithful area. Major road projects during the year included work on the Mammoth Plaza, Gardiner River Bridge, and a number of oiling and surfacing jobs. Grading of the east entrance approach road was completed.

Most of the various jobs in the development of the headquarters area at Wind Cave National Park, South Dakota, were completed.

At Isle Royale National Park Project, Michigan, development of a headquarters area on Mott Island was carried forward with substantial progress.

Temporary repairs were made to historical structures at Fort Laramie National Monument, Wyoming, where considerable historical research has been completed.

At Homestead National Monument of America, Nebraska, established during the year, work was begun to restore the land to its condition at the time the first homestead was taken up.

Important among development and construction undertakings completed or brought near conclusion was the extensive renovation of the interior of the Statue of Liberty where safe and more efficient public elevator service was installed.

Nearing completion was the Laura Spelman Rockefeller Memorial, at New Found Gap, on the Tennessee-North Carolina boundary in Great Smoky Mountains National Park.

Of interest to thousands of motorists in the future will be the vehicular tunnel under Williamsburg, Virginia, the planning of which was carried to a finished stage as a feature of continued development of Colonial National Parkway, linking Yorktown and Jamestown Island.

Significant architectural projects begun include the Adolph Ochs Memorial Observatory and Museum, in the Point Park section of Chickamauga and Chattanooga National Military Park, in Georgia. The terrace of the structure will command the nationally famous view of Moccasin Bend in the Tennessee River as seen from the heights of Lookout Mountain. Also started were the central administration building in the Tennessee section of

Great Smoky Mountains National Park, and the subheadquarters in the North Carolina portion. Headquarters facilities likewise were being built in Shenandoah National Park, Virginia.

Substantial progress was made during the year in several important undertakings in the realm of history and archeology, outstanding among them being restoration of the Washington Headquarters (Ford) Mansion in Morristown National Historical Park, New Jersey, and of the Derby House and Derby and Central Wharves at Salem Maritime National Historic Site, Massachusetts. This work is financed from ERA funds. Restorative treatment likewise was continued at the old furnace and east race in Hopewell Village National Historic Site, Pennsylvania. Historical military restorations included the period fences at Meade's Headquarters in Gettysburg National Military Park, Pennsylvania, and the famous stone wall of Marye's Heights, Fredericksburg and Spotsylvania National Military Park, Virginia. Architectural alterations were in progress at Fort Jefferson National Monument, Florida. They are designed to make it more serviceable as a public educational exhibit.

Archeological accomplishments included additional excavations and laboratory work at Jamestown Island, and the final cataloguing of a total of more than one million objects uncovered at Ocmulgee National Monument, Georgia. The important task of restoration, preservation and analysis was begun at the Georgia area, which already has become recognized as a focal point for southeastern archeological activities. Progress was recorded in construction of a model museum there which will shelter and exhibit the prehistoric treasures uncarthed.

An important contribution in the field of historical research resulted from a film copy recording of original documents relating to lands now embraced by Abraham Lincoln National Historical Park, Kentucky. The documents establish the birthplace of Lincoln within the park and show that his father owned the land.

Notable recreational assets made available to the public on non-Federal lands included a unique museum built exclusively by CCC forces at Mound State Monument, Moundville, Alabama, an area of superlative archeologic merit. Construction of the world's largest bob white quail hatchery was finished at Buffalo Spring Fish and Game Preserve, Rutledge, Tennessee, where workers also provided public recreational facilities. A long-range general development program was nearing its final stage at Parvin State Park, New Jersey, extension of needed picnic grounds was effected at Clarence Fahnestock Memorial State Park, New York, and new opportunities for lake beach recreation were being provided at Hamlin Beach State Park, New York. Altogether, recreation-conservation work was advanced in more than 100 State, county, and metropolitan park areas in 20 States of the East and South.

Initial general development programs, with CCC labor supervised by the National Park Service, were launched

during the year in several new Federal, State, and county recreational areas in widely scattered States east of the Mississippi. These included The Bluffs, a section of the Blue Ridge Parkway in North Carolina; Kettlefoot and Booker T. Washington State Parks, Tennessee; and Magnolia Spring State Park, Georgia.

Warwick State Forest, Massachusetts, served as a base from which enrollees carried forward rehabilitation work in storm-damaged woodlands, an activity that claimed the attention of still other CCC units assigned to the Service in New England parks and forests.

The Muskingum Watershed Conservancy District of Ohio is developing the land acquired for the Senecaville Dam and Reservoir, for recreational use. This area, to be known as Senecaville Reservation, will contain approximately 7,022 acres, of which 3,550 will be covered by water at normal times. A CCC camp under National Park Service supervision has started work on the recreational developments, which will include facilities for picnicking, swimming, fishing, boating, and other water sports, hiking and camping.

Developments by Civilian Conservation Corps forces have been approved for Illinois' new Kickapoo State Park and new holdings in two sections of Chain O' Lakes State Park. CCC camps were withdrawn from Starved Rock State Park, where State funds will be used for continued development, and from White Plains, where the CCC program was completed. The huge development at Skokie Lagoons in the Cook County Forest Preserve District is rapidly taking on the appearance of an outstanding recreational area, with several lagoons filled and planting of the last three years adding much to the appearance of the southern section of this development.

In Kansas, CCC forces completed their development program in Oberlin Sappa State Park, a water recreational area of great value in a region of little water.

An exit tunnel from the extreme low point in the opened section of Morrison Cave in Morrison Cave State Park, Montana, has been completed on a level route coming out of the side of the mountain. The road from State Highway No. 16 to the terminal parking area is now open to the public. The entire park was opened in the summer of 1939.

Approval was given for CCC work to be undertaken in the newly acquired Danville State Park in Iowa. In that State, developments have been completed in Stone Park and Lake of Three Fires State Park.

Developments have also been completed by CCC forces in Roaring River and Washington State Parks, Missouri.

Outstanding in New Mexico was the construction of a winter-sports lodge and ski-tow in Santa Fe-Hyde State Park by the CCC under supervision of the National Park Service in cooperation with State authorities. An increase of 25 percent in use over the previous year was reported in this area where the development program is nearing completion.

Although Crowley's Ridge State Park is the only one where development is complete in Arkansas, projects are being continued in Devil's Den, Petit Jean, Buffalo River, and Lake Catherine State Parks. The State Highway Department has paved more than 12 miles of approach road to Petit Jean. Devil's Den was officially opened for public use, and in this area the principal development project is construction of a dam which will create an additional 70-acre lake for fishing, boating, and the use of group campers.

Of Oklahoma's system of eight State parks, Quartz Mountain State Park is the first completely developed area and was opened last summer. Also of importance was the construction of an organized camp for Negroes at Lake Murray State Park, the first to be built with Federal and State funds. During the 1939 summer season several Negro agencies conducted a camping program there for youth groups.

Encouraging increases in the use of organized camps developed on recreational demonstration areas were a feature of the year's record. A total of 70 camps was under seasonal lease as against 56 camps for the preceding year. The total of camper days reached approximately 500,000, a gain of approximately 57 percent. Sharp increases also were recorded in the short-term use of recreational facilities, and in visitor use.

A new organized camp for boys has been constructed in Cuyamaca State Park, California, which will help in meeting some of the needs for facilities of this type in the southern part of the State. Aid in constructing this camp was given by the CCC, the State, and by private agencies which raised funds for this purpose. The camp was planned in consultation with the National Park Service.

A new camp for children was also erected in the Cleveland Metropolitan Parks during the year with the aid of a Work Projects Administration grant. This camp, situated in the North Chargin Reservation, was designed by a local architect in consultation with the National Park Service. It was operated for the first time during the summer of 1939 by the Cuyahoga County Council of the American Legion as a vacation camp for underprivileged girls and boys.

Although an appropriation by the legislature for acquisition of new park areas to serve the dense population centers of southern Michigan and to acquire certain outstanding holdings in the upper part of the State was vetoed by the Governor, a participation fund of \$250,000 annually for the fiscal years 1940 and 1941 was appropriated for improvement and development purposes only, in cooperation with Federal relief agencies.

Iowa again is fortunate in having a large fund for participation with Federal agencies in park development.

Park Administration

Several changes in administrative set-up were reported from the States during the year.

Under an executive order of Gov. E. D. Rivers, Georgia

became the first State to classify parks and recreational areas in accordance with the recommendations of its Park, Parkway, and Recreational-Area Study report. The classifications are: State Parks, State Recreation Areas, State Memorial Parks, and Natural Resource Reservations. In the future, no new areas may be acquired, developed, or administered as State parks without joint written concurrence in their designation as such by the Governor, the Commissioner of the Department of Natural Resources, the Director of the Division of State Parks, the Chairman of the State Planning Board, and the Director of the State Board of Health. State parks are defined as areas "selected because of (their) outstanding scenic, scientific, or educational recreational value, suitable for the use and benefit of the public of the State as a whole, such areas to be located throughout the State in the principal physiographic divisions, to be developed as vacation or day-use areas for the citizens of the State, insofar as such development is compatible with the primary aim of protection and conservation of the scenic, scientific, and aesthetic values of the State."

The Maine State Park Commission, which formerly served only in an advisory capacity, now administers Aroostook County State Park (100 acres) in addition to the four areas leased from the Soil Conservation Service.

The State parks of Rhode Island were placed under the jurisdiction of the Division of Forests and Parks in accordance with the Administrative Act of 1939, approved February 7. This act provides that the director of the Department of Agriculture and Conservation shall exercise the powers, duties, and functions heretofore exercised by the Division of Forests, Parks, and Parkways, and that responsibility for construction and maintenance of park roads and parkways, and construction and repair of park buildings and structures be transferred to the Department of Public Works. Under the Civil Service Act of 1939 the incumbents in State positions are considered temporary. Except for a few policy-making positions, all jobs will be filled from lists established by competitive examinations.

Although appointed during 1939, the Delaware Park Commission was inactive at Yearbook press time. The State supervisor had practically completed his recreation study report for Delaware and hoped to present its more important findings at an early meeting of the Commission. Delaware has one of the finest potential beach areas on the entire Atlantic coast. Dedication of at least part of the 9 miles of beach frontage now owned by the State, and acquisition of sufficient back country to permit development of extensive vacation accommodations are regarded as the most important projects before the Commission. It appears that the State's program for some time to come can well be confined to the planning, development, and operation of this one area.

During the year Harold Groth, superintendent of parks in Iowa, resigned and was succeeded by V. W. Flockinger who for several years had been superintendent of the CCC

camp at Backbone State Park and during two extended periods had been acting National Park Service inspector in the State.

With the opening of the new inn at Spring Mill State Park, Indiana, Myron Rees resigned as director of parks to assume the operation of this concession. Charles DeTurk, formerly landscape architect with the Department, became superintendent of parks.

The State of Missouri, during the year, employed planning consultants to prepare master plans for State parks, and about half of these have been completed.

In West Virginia, the expenditure for 1938-39 of \$124,611 for park work represented a considerable increase over previous years.

Two cooperative agreements for the development, maintenance, and operation of Conchas Dam State Recreational Area in New Mexico were expected to be consummated by January 1940. The War Department, which recently completed this project as a major water resources unit, approached the National Park Service and the State with respect to conservation and use of the native recreational values of the area. One of the proposed agreements, between the War Department and the National Park Service, provides for the planning and development of recreational facilities by the latter. The other agreement, between the War Department and the New Mexico State Park Commission, provides for maintenance and operation of these facilities by the State agency. The National Park Service would continue its relationship to the operation of the area in an advisory capacity.

An attempt is being made by the Texas State Parks Board to dispose of many so-called State parks which are of only local significance. This will permit the State to make appropriations for and strengthen administration of areas of real State park calibre.

The 1939-40 park budget in Texas represents an increase of 40 to 50 percent over the previous appropriation.

Feeling that concessionaire operation has proved unsatisfactory, the Texas State Parks Board has decided that in the future it will itself operate the facilities and activities in its areas.

In Maine there was created a legislative recess committee to investigate the feasibility of the acquisition by the State of property adjacent to the waters of the State for the purpose of establishing public bathing beaches, and for encouraging the development of the shores of the State. The committee may organize an advisory council of one or more citizens from each county to advise and assist it.

In both New York and Connecticut, parkway tolls were authorized in certain instances. In the former State, a 10-cent toll was established on the Hutchinson River Parkway, Westchester County. In Connecticut, an additional 10-cent toll will be put into effect on the Merritt Parkway in 1940. The law establishing the present 10-cent toll on this parkway provided for the construction of a second toll station on the continuation of the route at a point about

40 miles from the New York State line. The existing toll station is about 2 miles from the New York line. Cars registered in Connecticut may obtain an additional license plate at an annual cost of \$10 in lieu of paying toll for every trip over the parkway. All proceeds from the toll stations are placed in the Wilbur Cross Parkway fund for extension of the parkway system from the terminus of the Merritt Parkway to Hartford. It is expected the tolls will raise between \$1,250,000 and \$1,500,000 a year for this fund.

A new feature in the transportation service between Key West, Florida, and Fort Jefferson National Monument, 75 miles off the coast in the Gulf of Mexico, was inaugurated during the year. Meals for visitors to the monument and overnight accommodations for 60 persons are provided on a houseboat anchored at the fort.

Leadership Programs

One of the most significant trends during the year was the enlargement of leadership programs in the parks of a number of States. In many cases committees of citizens sponsored these movements, colleges and universities gave their assistance, and qualified naturalists and guides were employed to aid park users in understanding and appreciating area values which might pass unnoticed by the casual visitor. Public response to these programs was encouraging, and plans were laid for continuation and extension of this type of recreational and educational service.

In the eastern portion of the country, comprehensive leadership programs were conducted during the 1939 summer season on the following areas: Mount Tom Reservation, Massachusetts; Paris Mountain State Park, South Carolina; Monte Sano State Park, Alabama; Clarkco State Park, Mississippi; Cedar of Lebanon, Chickasaw, Natchez Trace and Standing Stone State Parks, Tennessee; and Swift Creek Recreational Demonstration Area, Virginia. The chief results of these programs have been summarized as follows: (1) A survey of existing organizations and recreational leadership in surrounding communities conducted prior to initiation of most of the programs brought important publicity for the particular park through which people were informed of its recreational opportunities, and the park officials were provided with a wealth of information on organizational and leadership sources which were used to advantage in follow-up contacts for publicity; (2) continuing interviews with community organizations and leaders by park representatives kept alive the interest aroused through the survey, created new interests, and assisted organizations in planning outing programs to the park for their own members or sponsored groups; (3) establishment of an advisory committee of laymen provided a medium for keeping each community regularly informed on program activities and events, assisted in appraising local interests, habits, and needs as a basis for formulating the day-by-day activities program, gave the communities represented a direct and personal interest in

the park's success, and offered means for integrating the park's program into the daily lives of the people; (4) through provision of leadership in the park, the area's resources were better interpreted to the public, visitors were afforded those organizational services needed in carrying out group activities, and instruction in skills needed to obtain the maximum enjoyment from the resources and facilities made available.

Park authorities of all the States in which these leadership programs were operated have stated their desire to have them conducted in the same parks next season and to have similar programs instituted on additional areas. In all instances, it was reported, the attitude of the local people was favorable toward provision of leadership services in the parks. The National Park Service hopes that the highly successful leadership program at Swift Creek Recreational Demonstration Area can be expanded to include a nature institute under the direction of the National Recreation Association, which has indicated its interest in such an undertaking.

Leadership and guidance programs were also conducted in a number of States of the north central region. Last year marked the second season for the employment of park naturalists in Iowa, and they were assigned to the following State parks: Backbone, Ledges, Dolliver, Lacey-Keosauqua, Maquoketa Caves, Stone, Lake Aquabia, McGregor and Pike's Peak, and Palisades-Kepler. More than 30,000 persons went on nature walks or visited the nature exhibits in the nine parks, and many additional thousands used the self-guiding nature trails. In this program, the State Advisory Committee, headed by Paul C. Taff, assistant director of extension service, Iowa State College, rendered valuable service. A training conference for all park naturalists was held at the beginning of the season at Iowa State College under a committee headed by Dr. George Hendrickson of the Zoological Department. H. E. Rothrock, assistant chief naturalist of the National Park Service, assisted throughout the conference. The State WPA Recreational Staff and the State Conservation Department also assisted. Coe, Cornell, Simpson, Iowa State Teachers', Morningside, Iowa Wesleyan Colleges and Iowa and Drake Universities cooperated in the leadership program. The State Conservation Department is attempting to work out plans for the appointment of a chief naturalist in the spring of 1940.

Illinois has two naturalists assigned on a 12 months basis to cover Pere Marquette State Park, the adjoining Pere Marquette Recreational Demonstration Area, and Starved Rock State Park. Newspaper publicity on the Starved Rock program alone has totaled more than 200 articles in papers throughout the State, as well as in magazines and other publications. Special nature programs were conducted with the cooperation of the Illinois Natural History Survey, the University of Chicago, Chicago Park District, Chicago Academy of Science, and Chicago Garden

(Concluded on page 18)

Table A.—Sources of funds for State park agencies,

STATES AND AGENCIES	TOTAL AVAILABLE FUNDS			APPROPRIATIONS		
	1935-36	1936-37	1938-39	1935-36	1936-37	1938-39
1	2	3	4	5	6	7
Total.....	Dollars 3,391,673.16	Dollars 3,878,218.79	Dollars 4,344,898.98	Dollars 2,005,810.67	Dollars 2,203,329.54	Dollars 2,681,201.32
ALABAMA: ¹						
Department of Conservation, Division of State Parks, Historical Sites and Monuments.....	17,166.55	26,623.16	36,891.77	9,630.04	19,792.50	36,891.77
Museum of Natural History (Mound Park).....	6,260.00	6,561.00		5,680.00	5,925.00	
ARIZONA: Not reported.....						
ARKANSAS: State Park Commission.....	7,970.04	5,065.99	16,000.00	2,938.65	3,400.00	11,000.00
CALIFORNIA: Department of Natural Resources, Division of Parks.....	289,103.20	306,686.40	537,531.20	179,127.30	179,127.50	364,585.00
CONNECTICUT: State Park and Forest Commission, Division of State Parks ¹	290,109.36	526,240.11		155,109.36	176,240.11	
DELAWARE: Not reported.....						
FLORIDA: Forest and Park Service.....	34,428.00	35,025.00	44,638.84	30,500.00	29,825.00	36,418.13
GEORGIA: Department of Natural Resources, Division of State Parks, Historic Sites and Monuments ¹	5,274.15	35,355.44	61,772.85	4,875.00	31,950.40	47,099.99
IDAHO: Department of Public Works ¹	7,624.29	7,624.29	4,435.00	3,575.00	3,575.00	4,435.00
ILLINOIS: Department of Public Works, and Buildings, Division of Parks.....	176,033.00	176,033.00	466,955.00	176,033.00	176,033.00	466,955.00
INDIANA: Department of Conservation, Division of State Parks, Lands and Waters.....	328,318.34	291,598.34	667,130.58	57,450.00	57,450.00	55,230.00
IOWA: State Conservation Commission, Division of Lands and Waters.....	373,724.16	370,675.91	190,615.04	110,000.00	110,000.00	170,987.00
KANSAS: Forestry, Fish and Game Commission.....	58,395.04	40,500.00	42,670.36			
KENTUCKY: Department of Conservation, Division of Parks.....	37,014.32	42,790.16	97,374.28	22,500.00	22,000.00	34,264.43
LOUISIANA: State Parks Commission.....		85,528.00	102,282.49		85,528.00	101,500.00
MAINE: State Park Commission.....	1,000.00	1,000.00	7,500.00	1,000.00	1,000.00	7,500.00
MARYLAND: Department of Forestry, Division of State Parks.....	29,079.91	54,668.28	13,127.46	12,811.00	11,628.00	12,320.15
MASSACHUSETTS: Department of Conservation, Division of State Parks ¹	301,015.50	129,916.93		301,015.50	129,916.93	
MICHIGAN: Department of Conservation, Division of Parks.....	142,390.04	156,730.98	203,650.75	127,352.03	119,500.00	203,650.75
MINNESOTA: Department of Conservation, Division of State Parks.....	217,370.15	119,581.01	217,598.74	69,420.56	67,372.72	50,624.85
MISSISSIPPI: State Board of Park Supervisors.....	1,123.94	2,595.39				
MISSOURI: State Park Board ¹	55,702.78	80,275.00	131,387.00		80,275.00	131,387.00
MONTANA: State Board of Land Commissioners.....						
NEBRASKA: State Game, Forestation and Parks Commission.....	15,800.00	16,700.00				
NEVADA: State Park Commission.....	500.00	500.00	5,000.00	250.00	250.00	5,000.00
NEW HAMPSHIRE: State Forestry and Recreation Commission.....	40,603.86	140,630.22		17,192.50	17,192.50	
NEW JERSEY:						
Department of Conservation and Development, Division of Forests and Parks.....	38,803.11	52,615.42	87,504.00	38,803.11	52,615.42	87,504.00
High Point Park Commission.....			98,762.06			72,350.00
NEW MEXICO: State Park Board.....	5,210.10	7,625.25		5,000.00	7,200.00	
NEW YORK: Not reported.....						
NORTH CAROLINA: Branch of State Parks, Forestry Division, Department of Conservation and Development.....	5,567.89	6,528.86	17,908.00	5,300.46	5,444.88	9,166.63
NORTH DAKOTA: State Parks Committee of State Historical Society.....	12,446.31	12,424.18		12,446.31	12,424.18	
OHIO:						
Division of Conservation, Department of Agriculture ¹	135,625.96	106,597.50		130,270.00	106,597.50	
Akron Metropolitan Park District.....			72,025.00			7,286.00
Archaeological and Historic Society.....	62,435.00	67,635.00	83,122.03	54,572.11	54,635.00	80,440.00
OKLAHOMA: State Planning and Resources Board, Division of State Parks.....	12,500.00	12,500.00		12,500.00	12,500.00	
OREGON:						
State Highway Commission.....	36,974.19	91,132.44	261,527.24			130,763.62
Champoeg Memorial Park.....	4,425.00	1,911.50		4,425.00	1,911.50	
PENNSYLVANIA: Bureau of Parks, Department of Forests and Waters.....	90,280.46	161,933.88	245,911.62	90,280.46	161,195.38	204,422.00
RHODE ISLAND: Division of Forests and Parks, Department of Agriculture and Conservation.....	218,797.35	255,694.14	130,914.04	106,508.07	115,965.00	
SOUTH CAROLINA: State Forestry Commission.....	5,014.76	21,705.48	40,697.84	5,014.76	20,359.67	22,500.00
SOUTH DAKOTA: Custer State Park and State Park Board.....	122,313.65	144,095.94		105,300.00	127,800.00	
TENNESSEE: Division of State Parks, Department of Conservation.....			85,816.00			27,495.00
TEXAS:						
State Parks Board.....	36,872.52	46,986.48	57,228.47	30,590.00	36,090.00	39,250.00
Board of Control (historical parks).....	10,014.00	9,484.00		10,014.00	9,484.00	
UTAH: State Board of Park Commissioners.....	500.00	500.00	1,250.00	500.00	500.00	1,250.00
VERMONT: State Board of Conservation and Development.....			25,250.00			25,250.00
VIRGINIA: State Commission of Conservation and Development, Division of Parks.....		46,190.00	64,560.00		46,190.00	64,560.00
WASHINGTON: State Parks Committee.....	57,950.00	57,950.00		20,200.00	20,200.00	
WEST VIRGINIA: State Conservation Commission, Division of Parks.....	19,855.77	48,351.46	132,746.32	19,855.77	48,351.46	120,000.00
WISCONSIN: State Conservation Commission, Division of Forests and Parks.....	68,254.35	50,198.40	93,115.00	55,844.57	25,000.00	49,115.00
WYOMING: State Board of Charities and Reform (Thermopolis and Saratoga).....	11,926.11	17,254.25		11,926.11	10,883.89	

¹ Fiscal year coincides with calendar year.² \$500 gift, remainder sand and gravel tax.³ Donations and contingent fund.⁴ Special appropriations for acquisition and develop-

ment, Sherwood Island State Park.

⁵ Highland Hammocks trust fund.⁶ Donations \$2,940.19, other \$131.25.⁷ Balance in rotary fund \$339,454.08, sand and gravel royalty \$70,288.89.

fiscal years 1935-36, 1936-37, and 1938-39

BONDS			CONCESSIONS			INCOME FROM OPERATIONS			OTHER		
1935-36	1936-37	1938-39	1935-36	1936-37	1938-39	1935-36	1936-37	1938-39	1935-36	1936-37	1938-39
8	9	10	11	12	13	14	15	16	17	18	19
Dollars 173, 522. 51	Dollars 237, 653. 26	Dollars 30, 609. 63	Dollars 124, 618. 45	Dollars 150, 289. 43	Dollars 75, 354. 66	Dollars 186, 254. 16	Dollars 201, 524. 34	Dollars 416, 213. 19	Dollars 901, 467. 37	Dollars 1, 085, 422. 22	Dollars 1, 141, 520. 18
						949. 54 589. 00	1, 705. 81 636. 00		6, 586. 97	5, 124. 85	
			1, 592. 74 24, 145. 84	1, 665. 99 24, 145. 84				5, 000. 00	² 3, 438. 65 8, 667. 08	40, 662. 00 350, 000. 00	³ 142, 336. 57
50, 959. 92	36, 548. 00	30, 609. 63				26, 203. 06	26, 203. 06		⁴ 135, 000. 00		
						1, 198. 00	2, 710. 00	5, 425. 69	2, 730. 00	2, 490. 00	⁵ 2, 795. 02
			399. 15 2, 867. 44	3, 375. 74 2, 867. 44				11, 601. 42		29. 30 1, 181. 85	⁶ 3, 071. 44
			44, 765. 85 612. 40 600. 00 2, 742. 10	41, 971. 99 1, 542. 93 700. 00 5, 777. 33	46, 857. 84 4, 276. 55	108, 523. 89	127, 076. 62	155, 299. 77 15, 351. 49	117, 578. 60 ⁸ 263, 111. 76 ⁹ 57, 795. 04	65, 099. 73 ⁷ 259, 132. 98 ⁸ 39, 800. 00	⁷ 409, 742. 97 ⁹ 42, 670. 36 7, 957. 42 103. 25
					2, 577. 84	11, 772. 22	15, 012. 83	52, 574. 59 679. 24			
					189. 40			617. 91	16, 268. 91	43, 040. 28	
			12, 403. 63	15, 276. 83	8, 055. 25			19, 387. 69	¹⁰ 15, 038. 01 ¹⁰ 135, 545. 96 1, 123. 94 ⁹ 45, 864. 72	37, 230. 98 ¹⁰ 36, 931. 46 2, 595. 39	¹⁰ 139, 530. 95
			9, 838. 06			15, 800. 00	16, 700. 00				
10, 273. 31	111, 376. 12		5, 265. 69	5, 945. 77		1, 129. 52	1, 381. 77		250. 00 6, 642. 84	250. 00 4, 734. 06	
					298. 00			26, 114. 06			
			210. 10	425. 25							
			267. 43	1, 083. 98				2, 122. 37			6, 619. 00
					1, 169. 00				5, 355. 96		57, 958. 00
			3, 300. 00	5, 500. 00				5, 612. 00 2, 682. 03	4, 562. 89	7, 500. 00	
									¹¹ 36, 974. 19	¹¹ 91, 132. 44	¹¹ 130, 763. 62
								41, 489. 62		738. 50	
112, 289. 28	89, 729. 14				4, 699. 70			16, 800. 21 18, 140. 39		50, 000. 00	109, 414. 13 57. 45
			6, 725. 50	7, 543. 50		10, 288. 15	1, 345. 81 8, 752. 44				44, 500. 00
			6, 282. 52	10, 896. 48	7, 179. 22			13, 821. 00			
								10, 799. 25			
					51. 86				37, 750. 00	37, 750. 00	
			2, 600. 00	15, 200. 00 6, 370. 36		9, 809. 78		12, 694. 46		9, 998. 40	¹² 44, 000. 00

⁸ Special appropriation for CCC participation.
⁹ Income from fish and game license fees.

¹⁰ Special allocation for land acquisition and develop-
ment.

¹¹ State highway funds from gas and auto license tax.
¹² State highway receipts. Spent on State park roads.

Table B.—Comparative expenditures for

STATES AND AGENCIES	TOTAL EXPENDITURES			INCREASE OR DE- CREASE FROM 1—	CAPITAL EXPENDITURES			
					TOTAL			
	1935-36	1936-37	1938-39		1936-37 to 1938-39	1935-36	1936-37	1938-39
1	2	3	4	5	6	7	8	
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	
Total.....	2,901,937.39	6,562,929.84	3,669,797.64	+925,392.83	1,169,519.35	2,189,019.43	1,369,543.19	
ALABAMA:								
Division of State Parks, Monuments and Historical Sites, Department of Conservation.....	17,166.55	26,623.16	* 35,698.10	+9,074.92	8,437.45	17,490.99		
Museum of Natural History.....	6,260.00	6,561.00			400.00	925.00		
ARIZONA: Not reported.....								
ARKANSAS: State Park Commission.....	4,320.88	5,776.50	15,956.98	+10,180.48	1,500.00	3,186.34	4,956.98	
CALIFORNIA: Division of Parks, Department of Natural Resources.....	226,663.09	249,861.73	187,571.47	-62,290.26	82,967.19	104,382.02	29,716.14	
COLORADO: Not reported.....								
CONNECTICUT: Division of State Parks, State Parks and Forest Commission.....	154,969.26	267,097.22				91,393.71		
DELAWARE: Not reported.....								
FLORIDA: Board of Forestry.....	33,269.04	29,639.18	43,598.59	+13,959.41	21,814.77	12,700.27	10,148.96	
GEORGIA: Division of State Parks, Historic Sites and Monuments, Department of Natural Resources.....	6,027.20	35,798.25	60,802.28	+25,004.03		864.00	11,635.15	
IDAHO: Department of Public Works.....	3,736.00	3,736.00	5,113.34	+1,377.34	522.28	522.28	1,378.93	
ILLINOIS: Division of Parks, Department of Public Works and Buildings.....	176,033.00	176,033.00	578,513.00	+402,480.00	49,505.00	49,505.00	395,883.00	
INDIANA: Division of State Parks, Lands and Waters, Department of Conservation.....	216,013.88	251,250.43	504,063.93	+237,813.20	29,665.84	36,359.80	278,439.08	
IOWA: Division of Lands and Waters, Department of Conservation.....	281,178.32	447,414.35	180,613.68	-266,800.67	194,105.92	342,531.24	30,433.26	
KANSAS: Forestry, Fish and Game Commission.....	58,395.04	40,500.00	42,670.36	+2,170.36	47,895.04	30,000.00		
KENTUCKY: Division of Parks, Department of Conservation.....	34,039.50	34,315.61	95,114.31	+60,798.70	15,027.38	6,143.90	28,928.86	
LOUISIANA: State Park Commission.....		13,776.00	78,307.25	+64,531.25		4,570.00	38,265.44	
MAINE: State Park Commission.....	600.00	500.00	1,050.00	+550.00				
MARYLAND: Forestry Department (University of Maryland).....	24,751.91	25,468.28	13,227.26	-12,241.02	5,678.91	7,578.28	2,163.10	
MASSACHUSETTS: Division of Parks and Recreation, Department of Conservation.....	301,015.50	129,916.93			214,218.57	13,773.65		
MICHIGAN: State Park Division, Department of Conservation.....	106,500.59	143,249.21	202,837.95	+59,588.74	3,013.37	21,317.34	59,980.00	
MINNESOTA: Division of State Parks, Department of Conservation.....	217,370.15	108,781.77	211,043.43	+102,261.66	157,045.60	45,044.47	120,763.75	
MISSISSIPPI: State Forestry Commission, State Board of Park Supervisors.....	1,123.94	2,595.39						
MISSOURI: State Park Board.....	55,802.78	80,274.33	131,172.12	+50,897.12	21,812.87	27,783.33	89,290.60	
MONTANA: Not reported.....								
NEBRASKA: Game, Forestation and Parks Committee.....	16,742.00	16,924.00						
NEVADA: State Park Commission.....	250.00	250.00	4,839.98	+4,589.98	250.00	250.00		
NEW HAMPSHIRE: Forestry and Recreation Committee.....	36,445.35	118,342.31			18,279.38	98,534.81		
NEW JERSEY:								
Department of Conservation and Development.....	38,803.11	52,615.43	87,504.00	+34,888.58	5,559.97	12,305.91	4,600.00	
High Point Park Commission.....			98,762.06				27,350.00	
NEW MEXICO: State Park Commission.....	4,994.77	7,206.23			471.19	1,305.23		
NEW YORK: Department of Conservation.....		3,167,521.29				902,040.96		
NORTH CAROLINA: Board of State Parks, Forest Division, Department of Conservation and Development.....	5,567.89	6,523.86	16,389.21	+9,860.35			7,119.00	
NORTH DAKOTA: State Park Committee, of State Park and Historical Society.....	12,446.31	12,424.18			6,457.71	5,854.08		
OHIO:								
Division of Conservation, Department of Agriculture.....	135,625.96	106,597.50			92,099.23	53,892.50		
Akron Metropolitan Park District.....			65,613.00				20,500.00	
State Archaeological and Historical Society.....	62,435.00	79,993.00	79,989.00	-4.00	31,500.00	37,268.00	26,890.00	
OKLAHOMA: Division of State Parks, Planning and Resources Board.....	6,708.70	14,983.51			722.42	9,530.44		
OREGON:								
State Highway Department.....	36,974.19	91,132.44	130,763.62	+39,631.18	20,364.76	64,513.38	91,657.40	
Champoeg Memorial Park.....	4,425.00	1,685.79			937.41	135.79		
PENNSYLVANIA: Department of Forests and Waters, Bureau of Parks.....	90,280.46	161,933.88	204,422.00	+42,488.12				
RHODE ISLAND: Division of Forests and Parks, Department of Agriculture and Conservation.....	215,189.08	222,770.00	130,924.78	-91,845.22	83,535.52	86,453.10	6,871.87	
SOUTH CAROLINA: State Forestry Commission.....	5,014.76	21,705.48	40,649.44	+18,943.96		386.50	987.28	
SOUTH DAKOTA: Custer State Park and State Park Board.....	110,412.90	127,755.49			14,727.15	26,219.00		
TENNESSEE: Division of State Parks, Department of Conservation.....			61,629.00				20,313.00	
TEXAS:								
State Park Board.....	37,534.79	42,193.45	54,121.17	+11,927.72	2,337.69	7,603.88	6,000.00	
Board of Control (historical parks).....	9,796.46	8,939.55			1,591.64			
UTAH: State Board of Park Commissioners.....	500.00	500.00	750.00	+250.00				
VERMONT: Vermont Forest Service.....			24,224.59				6,187.17	
VIRGINIA: Division of State Parks, Virginia Conservation Commission.....		48,005.00	64,135.00	+16,130.00			8,830.00	
WASHINGTON: State Park Committee.....	57,950.00	57,950.00						
WEST VIRGINIA: Division of State Parks, Conservation Commission.....	19,855.77	48,351.46	124,611.74	+76,260.28	15,767.45	42,583.65	23,139.22	
WISCONSIN: Division of Forests and Parks, Conservation Department.....	56,812.15	50,198.40	93,115.00	+42,916.60	20,691.97	19,758.40	17,115.00	
WYOMING: State Board of Charities and Reform (Thermopolis and Saratoga).....	11,926.11	17,254.25			675.05	2,720.54		

¹ Includes only figures for agencies reporting 1936-37 and 1938-39.² Period Apr. 1 to Sept. 30, 1939.³ Allocation, not reported.⁴ Interest and sinking fund.

State Parks, 1935-36, 1936-37, and 1938-39

CAPITAL EXPENDITURES—continued						TOTAL NONCAPITAL EXPENDITURES			OTHER			NONCAPITAL EXPENDITURES LAST FISCAL YEAR		
LANDS			IMPROVEMENTS											
1935-36	1936-37	1938-39	1935-36	1936-37	1938-39	1935-36	1936-37	1938-39	1935-36	1936-37	1938-39	Operation and main- tenance	Adminis- tration	Other
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
784,686.40	1,232,707.93	405,682.87	384,832.95	956,311.50	963,860.32	1,652,668.71	4,162,332.56	2,053,162.09	79,749.33	211,577.85	247,092.36	1,274,387.71	557,852.10	220,922.28
8,031.87	16,774.69	-----	405.58	716.30	-----	8,729.10	9,132.17	35,698.10	-----	-----	-----	27,168.16	8,529.94	-----
100.00	125.00	-----	300.00	800.00	-----	5,860.00	5,636.00	-----	-----	-----	-----	-----	-----	-----
1,500.00	3,186.34	1,614.75	-----	-----	3,342.23	2,820.88	2,590.86	11,000.00	-----	-----	-----	2,836.51	6,420.00	1,743.49
59,627.00	77,170.00	10,086.03	23,340.19	27,212.02	19,630.11	143,695.90	145,479.71	157,855.33	-----	-----	-----	116,878.36	40,730.49	246.48
-----	87,610.43	-----	-----	3,783.28	-----	154,969.26	175,703.51	-----	-----	-----	-----	-----	-----	-----
21,814.77	7,445.64	2,641.27	-----	5,254.63	7,507.69	11,454.27	16,938.91	33,449.63	-----	-----	-----	20,063.94	13,385.69	-----
-----	864.00	75.00	-----	-----	11,560.15	6,037.20	34,934.25	49,167.13	-----	-----	-----	24,951.86	24,215.27	-----
3,755.00	3,755.00	108,896.00	45,750.00	45,750.00	286,987.00	126,528.00	126,528.00	182,630.00	-----	-----	-----	3,734.41	-----	-----
29,665.84	36,359.80	2,542.53	-----	-----	275,896.55	186,348.04	214,890.63	225,624.85	-----	-----	-----	145,430.00	37,200.00	-----
182,600.85	300,756.25	-----	11,505.07	41,774.99	30,433.26	87,072.40	104,883.11	150,180.42	-----	-----	-----	186,914.42	38,710.43	-----
-----	-----	750.00	47,895.04	30,000.00	-----	10,500.00	10,500.00	-----	-----	-----	42,670.36	112,065.58	38,114.84	-----
-----	-----	19,580.00	15,027.38	6,143.90	28,178.56	19,012.12	28,171.71	66,185.45	-----	-----	-----	14,697.24	46,575.87	4,912.34
4,978.91	6,878.28	900.00	700.00	700.00	1,263.10	600.00	500.00	1,050.00	-----	-----	-----	21,581.81	18,460.00	-----
214,218.57	13,773.65	49,980.00	-----	-----	86,796.93	19,073.00	17,890.00	11,064.16	-----	-----	-----	5,564.16	5,500.00	-----
1,500.00	-----	-----	1,513.37	21,317.34	10,000.00	103,487.22	106,836.42	142,857.95	3 116,143.28	-----	-----	114,987.95	27,870.00	-----
125,825.89	36,931.46	-----	31,219.71	8,113.01	120,763.75	60,324.55	63,737.30	90,279.68	3 15,095.45	-----	-----	58,988.67	11,372.69	19,918.32
14,150.00	18,450.00	71,825.31	7,662.87	9,333.33	17,465.29	1,123.94	2,595.39	41,881.52	-----	-----	-----	24,504.10	17,377.42	-----
-----	-----	-----	-----	-----	-----	33,989.91	52,491.00	-----	-----	-----	-----	-----	-----	-----
250.00	250.00	-----	-----	-----	-----	-----	-----	4,839.98	3 16,742.00	3 16,924.00	-----	-----	4,839.98	-----
2,940.00	285.00	-----	15,339.38	98,249.81	-----	18,165.97	19,807.50	-----	-----	-----	-----	-----	-----	-----
-----	1,000.00	-----	5,559.97	11,305.91	4,600.00	33,243.14	40,309.52	82,904.00	-----	-----	-----	57,442.00	25,462.00	-----
-----	600.00	-----	471.19	705.23	27,350.00	4,523.58	5,901.00	71,412.06	-----	-----	-----	64,212.06	7,200.00	-----
-----	443,962.03	-----	458,078.93	-----	-----	2,265,480.33	-----	-----	-----	-----	-----	-----	-----	-----
6,406.14	1,346.16	-----	51.57	4,507.92	7,119.00	5,567.89	6,528.86	9,270.21	-----	-----	-----	3,775.30	5,494.91	-----
-----	-----	-----	-----	-----	-----	5,988.60	6,570.10	-----	-----	-----	-----	-----	-----	-----
800.00	14,500.00	4,000.00	91,299.23	39,392.50	16,500.00	43,526.73	52,705.00	45,113.00	-----	-----	-----	34,613.00	10,500.00	-----
5,500.00	12,358.00	21,973.00	26,000.00	24,910.00	4,917.00	30,935.00	42,725.00	53,099.00	-----	-----	-----	47,679.00	5,420.00	-----
120.00	2,804.25	602.42	6,726.19	-----	-----	5,986.28	5,453.07	-----	-----	-----	-----	-----	-----	-----
14,364.76	57,783.02	77,165.98	6,000.00	6,730.36	14,491.42	16,609.43	26,619.06	39,106.22	-----	-----	-----	26,047.75	13,058.47	-----
-----	-----	937.41	-----	135.79	-----	3,487.59	1,550.00	-----	-----	-----	-----	-----	-----	-----
45,364.70	39,978.76	-----	38,170.82	46,474.34	6,871.87	90,280.46	161,933.88	-----	-----	-----	3 204,422.00	-----	-----	-----
14,368.00	26,046.77	-----	359.15	386.50	987.28	131,653.56	136,316.90	124,052.91	-----	-----	-----	25,136.78	14,525.38	3 124,052.91
-----	20,313.00	-----	-----	172.23	-----	5,014.76	21,318.98	39,662.16	-----	-----	-----	-----	41,316.00	-----
-----	-----	2,337.69	7,603.88	6,000.00	30,139.77	29,124.45	48,121.17	4 5,057.33	4 5,465.12	-----	-----	17,121.17	31,000.00	-----
-----	-----	1,532.26	1,591.64	-----	8,264.20	7,347.91	-----	-----	-----	-----	-----	750.00	-----	-----
-----	-----	-----	-----	6,187.17	500.00	500.00	750.00	-----	-----	-----	-----	12,525.10	5,512.32	-----
-----	4,830.00	-----	-----	4,000.00	-----	48,005.00	55,305.00	-----	-----	-----	-----	40,820.00	12,120.00	2,365.00
8,448.12	11,515.00	3,895.00	7,319.33	31,068.65	19,244.22	4,088.32	5,767.81	101,472.52	3 57,950.00	3 57,950.00	-----	52,398.38	25,390.40	23,683.74
18,355.98	10,198.40	4,115.00	2,335.99	9,560.00	13,000.00	36,120.18	30,440.00	76,000.00	-----	-----	-----	11,500.00	20,500.00	44,000.00
-----	-----	675.05	2,720.54	-----	-----	11,251.06	14,533.71	-----	-----	-----	-----	-----	-----	-----

Table C.—Land provisions: State park systems

States, agencies and areas	Number of areas	Total acreage	Acreage acquired by—				Opened last fiscal year	Acreage added last fiscal year	Acreage subtracted last fiscal year	Net gain (acres)
			Purchase	Gift	Transfer from: Federal Government (F); county government (C); other department (O)	Other or not specified				
1	2	3	4	5	6	7	8	9	10	11
Total.....	891	1,210,873.444	229,379.86	254,854.824	292,257.12	434,381.64	-----	98,672.97	27.41	98,645.56
ALABAMA: Division of State Parks, Department of Conservation.....	16	22,242.00	-----	-----	-----	22,242.00	-----	-----	-----	-----
ARKANSAS:										
State Park Commission.....	10	15,751.00	1,185.00	4,664.00	-----	9,902.00	-----	202.00	-----	202.00
Buffalo River.....			-----	-----	-----	-----	-----	120.00	-----	-----
Petit Jean.....			-----	-----	-----	-----	-----	82.00	-----	-----
CALIFORNIA: Division of Parks, Department of Natural Resources.....	70	306,338.00	-----	-----	-----	306,338.00	-----	-----	-----	-----
CONNECTICUT: State Park and Forest Commission ¹			-----	-----	-----	-----	-----	-----	-----	-----
DELAWARE: State Park Commission ¹			-----	-----	-----	-----	-----	-----	-----	-----
FLORIDA:										
Forest and Park Service.....	10	23,049.00	16,189.00	6,540.00	-----	320.00	-----	2,195.00	-----	2,195.00
Highland Hammocks.....			-----	-----	-----	-----	-----	1,240.00	-----	-----
Myakka River.....			-----	-----	-----	-----	-----	160.00	-----	-----
Pan American.....			-----	-----	-----	-----	-----	270.00	-----	-----
Gold Head Branch.....			-----	-----	-----	-----	×	-----	-----	-----
Volusia Hammock.....			-----	-----	-----	-----	-----	525.00	-----	-----
GEORGIA:										
Division of State Parks, Historic Sites, and Monuments, Department of Conservation.....	13	11,085.13	1.50	10,826.66	-----	256.97	-----	2,164.00	-----	2,164.00
Fort Mountain.....			-----	-----	-----	-----	-----	12.50	-----	-----
Vogel.....			-----	-----	-----	-----	-----	1.50	-----	-----
Sittons' Gulch.....			-----	-----	-----	-----	-----	150.00	-----	-----
Magnolia Springs.....			-----	-----	-----	-----	-----	1,100.00	-----	-----
Miona Springs.....			-----	-----	-----	-----	-----	900.00	-----	-----
IDAHO:										
Department of Public Works.....	1	7,838.00	-----	-----	-----	7,838.00	-----	50.00	-----	50.00
Heyburn.....			-----	-----	-----	-----	-----	50.00	-----	-----
ILLINOIS:										
Division of Parks, Department of Public Works and Buildings.....	70	14,041.95	5,119.85	8,922.10	-----	-----	-----	127.81	-----	127.81
Fox Ridge.....			-----	-----	-----	-----	-----	84.81	-----	-----
Chain-o-Lakes.....			-----	-----	-----	-----	×	-----	-----	-----
Pere Marquette.....			-----	-----	-----	-----	×	42.00	-----	-----
Spittler Woods.....			-----	-----	-----	-----	×	-----	-----	-----
New Salem.....			-----	-----	-----	-----	-----	1.00	-----	-----
Cahokia Courthouse.....			-----	-----	-----	-----	×	-----	-----	-----
INDIANA:										
Division of State Parks, Lands and Waters, Department of Conservation.....	16	14,077.91	8,888.09	5,189.82	-----	-----	-----	90.00	-----	90.00
McCormicks' Creek.....			-----	-----	-----	-----	-----	50.00	-----	-----
Spring Mill.....			-----	-----	-----	-----	-----	40.00	-----	-----
IOWA:										
Division of Lands and Waters, State Conservation Commission.....	75	20,434.16	-----	-----	-----	20,434.16	-----	166.15	-----	166.15
Black Hawk Lake.....			-----	-----	-----	-----	-----	166.15	-----	-----
KANSAS: Forestry Fish and Game Commission.....	20	13,303.50	7,358.30	5,377.20	-----	2,568.00	-----	-----	-----	-----
KENTUCKY:										
Division of Parks, Department of Conservation.....	21	6,917.21	124.50	6,622.91	-----	169.80	-----	15.00	-----	15.00
Butler Memorial.....			-----	-----	-----	-----	-----	15.00	-----	-----
LOUISIANA: State Parks Commission.....	8	6,885.71	6,089.71	296.00	-----	500.00	-----	-----	-----	-----
MAINE:										
State Parks Commission.....	6	68,730.00	-----	60,100.00	(F) 8,630	-----	-----	51,730.00	-----	51,730.00
Baxter.....			-----	-----	-----	-----	-----	43,000.00	-----	-----
Seabago Lake.....			-----	-----	-----	-----	-----	1,296.00	-----	-----
Bradbury Mountain.....			-----	-----	-----	-----	-----	172.00	-----	-----
Mount Blue.....			-----	-----	-----	-----	-----	4,575.00	-----	-----
Lake St. George and Frye Mountain.....			-----	-----	-----	-----	-----	2,587.00	-----	-----
Aroostook County.....			-----	-----	-----	-----	-----	100.00	-----	-----
MARYLAND:										
Division of State Parks, Department of Forestry.....	6	3,151.26	1,415.75	1,289.41	-----	446.10	-----	38.70	-----	38.70
Elk Neck.....			-----	-----	-----	-----	-----	.60	-----	-----
Patapsco.....			-----	-----	-----	-----	-----	38.10	-----	-----
MASSACHUSETTS: Division of State Parks, Department of Conservation ¹			-----	-----	-----	-----	-----	-----	-----	-----
MICHIGAN:										
Division of State Parks, Department of Conservation.....	75	39,857.85	4,028.35	19,311.00	(O) 10,210.50	6,308.00	-----	262.11	27.41	234.70
Orchard Beach.....			-----	-----	-----	-----	-----	33.00	-----	-----
Pictured Rock.....			-----	-----	-----	-----	-----	-----	27.41	-----
Port Huron.....			-----	-----	-----	-----	-----	143.00	-----	-----
Traverse City.....			-----	-----	-----	-----	-----	23.11	-----	-----
Warren Dunes.....			-----	-----	-----	-----	-----	22.50	-----	-----
Wilderness.....			-----	-----	-----	-----	-----	40.00	-----	-----
Luddington.....			-----	-----	-----	-----	-----	.50	-----	-----
MINNESOTA:										
Division of State Parks, Department of Conservation.....	48	44,859.30	30,959.23	13,900.07	-----	-----	-----	-----	-----	-----
MISSISSIPPI: State Forestry Commission, State Board of Park Supervisors ¹			-----	-----	-----	-----	-----	-----	-----	-----
MISSOURI:										
State Park Board.....	24	51,113.88	45,131.88	5,982.00	-----	-----	-----	5,304.00	-----	5,304.00
Crowder.....			-----	-----	-----	-----	-----	635.00	-----	-----
Big Oak Tree.....			-----	-----	-----	-----	-----	1,000.00	-----	-----
Deer Run.....			-----	-----	-----	-----	-----	600.00	-----	-----
Fort Zumwalt.....			-----	-----	-----	-----	-----	45.00	-----	-----

¹ Not reported.

Table C.—Land provision: State park systems—Continued

States, agencies and areas	Number of areas	Total acreage	Acreage acquired by—				Opened last fiscal year	Acreage added last fiscal year	Acreage subtracted last fiscal year	Net gain (acres)
			Purchase	Gift	Transfer from: Federal Government (F); county government (C); other department (O)	Other or not specified				
1	2	3	4	5	6	7	8	9	10	11
MISSOURI—Continued.										
State Park Board—Continued.										
Mark Twain.....								983.00		
Pershing.....								1,800.00		
Roaring River.....								161.00		
Sam A. Baker.....								40.00		
Van Meter.....								40.00		
MONTANA: State Park Commission.....	1	2,089.00				2,089.00				
NEBRASKA: State Game, Forestation and Parks Commission ¹	5	11,493.28		2,018.66	(O)9,474.62					
NEVADA: State Park Commission.....										
NEW HAMPSHIRE: State Forestry and Park Commission ¹										
NEW JERSEY:										
Department of Conservation and Development.....	12	4,459.00	2,835.00	916.00	(O)708.00			11.00		11.00
Parvin.....								11.00		
Stephens.....							×			
Commissioners of High Point Park.....	1	12,000.00		12,000.00						
NEW MEXICO: State Park Board ¹										
NEW YORK: Division of Lands and Forests, State Conservation Department, Council of Parks ¹										
NORTH CAROLINA:										
Branch of State parks, Department of Conservation and Development.....	7	27,001.00	2,759.00	6,242.00		18,000.00		16,800.00		16,800.00
Morrow Mountain.....										
Hanging Rock.....										
Cape Hatteras.....										
Pettigrew.....							×	16,800.00		
OHIO:										
Akron Metropolitan Park District.....	5	2,199.54	530.19	1,568.74		100.61		102.50		102.50
Virginia Kendall.....								100.00		
Goodyear Heights.....								2.50		
State Archaeological and Historical Society.....	35	2,274.67	1,350.62	924.05				314.00		314.00
Fort Hill.....								294.00		
Rankin House.....								20.00		
OKLAHOMA:										
Division of State Parks, State Planning and Resources Board ¹										
OREGON: State Highway Commission.....	128	22,020.71	14,365.39	7,655.32						
PENNSYLVANIA: Bureau of Parks, Department of Forests and Waters.....	48	36,345.00	19,678.00			16,677.00				
RHODE ISLAND: Division of Forests and Parks, Department of Agriculture and Conservation.....	47	7,721.30				7,721.30				
SOUTH CAROLINA:										
State Forestry Commission.....	15	22,844.00		22,844.00				7,227.00		7,227.00
Barnwell.....							×			
Chester.....							×			
Greenwood.....							×	1,116.00		
Table Rock.....							×			
Lee.....							×			
Hunting Island.....								6,111.00		
SOUTH DAKOTA: Park Board ¹										
TENNESSEE:										
Division of State Parks, Department of Conservation.....	11	11,048.70		4,010.00		7,038.70		11,048.70		11,048.70
Chickasaw.....							×	1,800.00		
Natchez Trace.....							×	1,600.00		
Standing Stone.....							×	675.00		
Cedars of Lebanon.....							×	339.70		
Cove Lake.....								842.00		
Harrison Bay.....								1,432.00		
Shelby.....								510.00		
Booker T. Washington.....								350.00		
Cumberland.....								1,500.00		
Pickett.....								1,000.00		
TEXAS: Park Board.....	33	308,104.00	15,739.00	31,405.00	(O) 260,960.00					
UTAH: Board of Park Commissioners.....	1	.384		.384						
VERMONT:										
State Board of Conservation and Development.....	16	5,358.00	2,118.50	3,239.50						
Saint Alhans.....							×			
VIRGINIA:										
Division of State Parks, Conservation Commission.....	6	17,627.00	7,672.00	9,955.00				57.00		57.00
Hungry Mother.....								57.00		
WASHINGTON: State Parks Committee ¹										
WEST VIRGINIA:										
Division of Forests and Parks, State Conservation Commission.....	12	32,233.00	25,651.00			6,582.00		565.00		565.00
Lost River.....							×	80.00		
Cacapon.....								485.00		
WISCONSIN:										
Division of Forests and Parks, State Conservation Commission.....	19	13,245.00	10,190.00	3,055.00				193.00		193.00
Tower Hill.....								57.00		
Terry Andrae.....								16.00		
Copper Falls.....								40.00		
Devil's Lake.....								80.00		
WYOMING: State Board of Charities and Reform ¹										

¹ Not reported.² Leased.

(Concluded from page 11)

Club. Other agencies assisting in the Illinois program included the Chicago Women's Club, Chicago Prairie Club, Springfield Nature Club, State Federation of Women's Clubs, and State Geological Survey.

The Missouri Park Board also completed the second year of its leadership program, with naturalists assigned to Montauk, Merramec, Bennett Spring, Roaring River, Sam A. Baker, and Big Spring State Parks. As in Iowa, most of these naturalists were employed on a half time basis, devoting part of their time to research for which they receive college or university credits. This arrangement has been instrumental in obtaining the close cooperation of various university service departments. The general policies of the program were set up by a committee consisting of E. A. Mayes, chief, Division of Lands and Waters; Dr. Rudolf Bennitt, director, Wildlife Survey, Missouri University; and J. B. Williams, recreation planning consultant, National Park Service. Cooperation was also given by the Missouri Conservation Commission, State Geological Survey, and departments of the University of Missouri, Springfield State Teachers' College, Rolla School of Mines, Drury College, United States Forest Service, Missouri Botanical Gardens, and the United States Department of Agriculture. In addition, many local organizations such as garden clubs, nature clubs, 4-H clubs, boy and girl scouts, civic clubs, and conservation organizations cooperated. A training conference for park naturalists was held at Missouri University June 1, and 2, 1939, sponsored by the State Park Board and the State Conservation Commission. Total attendance for nature activity in Missouri State Parks was reported at approximately 17,000.

Indiana, which has employed naturalists through the State Conservation Department for approximately 8 years, expanded its program during the year, with one naturalist appointed on a full-time basis to take charge of the natural museum in McCormick's Creek State Park. Although exact figures were not available at Yearbook press time, it was believed, by registration for the last season, attendance at this museum would total more than 20,000. Probably several thousand additional persons called without registering. Attendance on nature walks and programs, it was believed, would total approximately 40,000 in addition to the museum visits.

In this State, naturalists have been assigned to the following State parks: McCormick's Creek, Turkey Run, Brown County, Pokagon, Indiana Dunes, Spring Mill, Clifty Falls, and Shakamak. They have taken over many of the duties of a recreation director, and, in addition to illustrated lectures and nature walks, their programs include social evenings in the park lodges, hayrides, etc. As the result of contacts with universities and colleges through the National Park Service, special hiking groups from these institutions have participated in the park nature program. A success-

ful winter sports program, with a specialist in winter sports in charge, has been in operation at Pokagon State Park. Through the interest of the National Park Service, in cooperation with State Park Director DeTurk, a nature council has been organized at Muncie, Indiana. It includes representatives of the Ball State Teachers' College, public schools, various youth groups, and the local riding academy. Plans of the unit seek construction of a hiking and bridle path along the White River within the city to Mounds State Park, a distance of more than 20 miles.

Extensive leadership programs have been in operation in most of the State parks of Michigan and Wisconsin, with personnel supplied by the Recreation Division of the WPA. Training conferences for park leadership were held prior to the assignment of leaders. These were held in cooperation with the State conservation departments, State colleges and universities, and other State and Federal agencies, including the National Park Service.

In order to encourage a wider and more fruitful use of South Carolina parks, the State Commission of Forestry has established a regional system of use leadership. Two recreation directors are employed for the four summer months. One of these has general supervision over the operation, maintenance, and use of all areas in the northwestern half of the State, while the other has the same responsibilities for areas in the southeastern section. In connection with the use program, each director is responsible for planning a program of activities for all areas under his direction, making the necessary public contacts to initiate these programs, handling publicity concerning them, and giving any general supervision to the direction of them. Custodians of the more important areas have been selected partially on the basis of their ability to direct recreational activities. In order to make camping available to small, limited income agencies and groups, the State also employs two camp directors and skeleton staffs to operate group camps at Kings Mountain and Cheraw. These camp directors work in the western half of the State. The entire program is in the charge of Assistant State Forester R. A. Walker. Last summer the Greenville County Council for Community Development cooperated with the State in carrying out a comprehensive program of activities at Paris Mountain.

Activities programs were conducted in Devil's Den and Petit Jean State Parks, Arkansas, by the Arkansas State Park Commission in cooperation with the Work Projects Administration. Park use studies made in 1939 indicate an increase of 20 percent in recreation participation in the parks of the State.

The Texas State Parks Board, in cooperation with the Work Projects Administration, intends to conduct a recreational use demonstration program in some of the State parks next summer. Leadership personnel will be provided by the WPA.



An increasing number of park systems are providing recreational leadership. The scene at left above is in the Indian Village at Jones Beach State Park, New York. At right, a park naturalist organizes a nature walk in Turkey Run State Park, Indiana.

(National Park Service Photos.)



This group in Yosemite National Park, California, is on a bird walk under guidance of a Ranger Naturalist. On the trip 125 persons identified 25 different species of birds.

(National Park Service Photo.)



Left—The Kearsage Pinnacles in Kings Canyon National Park, California.

(Photo by Walter L. Huber.)

Below—Terminus of the Blue Glacier on the north side of Mount Olympus, Olympic National Park, Washington.

(Photo by National Park Service.)



THE OLYMPIC EXTENSION AND THE NEW KINGS CANYON NATIONAL PARK

By IRVING BRANT, *Consultant, Department of the Interior*

ON JANUARY 2, 1940, President Roosevelt exercised a portion of the discretionary power vested in him by Congress, and added 187,411 acres to the Olympic National Park in the State of Washington. The President's proclamation brought into the park the famous "rain forests" of the Bogachiel, Hoh, Queets, and Quinault River Valleys, on the west side of the park, extending down toward the Pacific Ocean, and the magnificent stands of Douglas fir, sitka spruce, western red cedar and western hemlock which characterize those low valleys of heavy rainfall.

The proclamation also added the great Elwha River Valley on the north, and the "panorama country" behind it—Hurricane Hill, Obstruction Point, and Deer Park—famous winter sports regions which in summer furnish tourists an outlook over the Strait of Juan de Fuca and Vancouver Island on one side, and a long vista of snow-capped peaks and glaciers centering in Mount Olympus on the other. The President likewise put the "Seattle skyline" of high peaks into the park, on the east, and carried the boundary down two rivers of notable recreational value, the Dosewallips on the east and the North Fork of the Skokomish (to Lake Cushman) on the southeast. The enlargement put the north shore of beautiful Lake Quinault in the park, and protected the mountain slopes north and west of Lake Crescent. The President acted after both the United States Forest Service and National Park Service reported to him that these additions to the park would not interfere with the woodpulp industry on the Olympic peninsula, and after consultation with Governor Martin of the State of Washington.

With these additions, the Olympic National Park, established by act of Congress in 1938, now embraces a total of 835,411 acres, and becomes the fourth largest national park in the continental United States, being exceeded only by Yellowstone, Glacier, and the combined Grand Canyon National Park and National Monument. Since Congress fixed the maximum size of the Olympic park at 898,292 acres, it is still possible to add 62,881 acres by Presidential proclamation. Steps have been taken looking toward the acquisition and development of a national parkway down the Queets River and a national seashore recreational area along the coast from the Quinault Indian Reservation to Lake Ozette, which may at some future time become a part of the national park.

The Olympic National Park unites three distinctive features: a great central mountain wilderness of snow peaks and glaciers above timberline; a belt of heavy forests, mostly wilderness, but partly accessible to motorists, surrounding

the high mountains; and a recreation area traversed by motor roads on the north side of the park, extending from Lake Crescent at the northwest corner to high, lightly forested Deer Park at the northeast corner.

The rainfall in the Bogachiel, Hoh, Queets, and Quinault Valleys is five times as heavy as in the Elwha, and mature trees of the same species are more than five times as large. The largest known Douglas fir in the world, 16 feet 8 inches in diameter at shoulder height, is in the area added to the park on the Queets River. The term "rain forest" or "cold tropics" is applied to the luxuriant growth of moss which hangs in festoons from big-leaved maples and other trees, and the peculiar overhead rooting of the trees, which start as seedlings on high stumps or fallen logs, and send their roots down to the ground. Hundreds of years later, after the supporting stump or log has rotted away, the mature tree still stands with part of its root system in the air, the base of the trunk terminating perhaps 10 or 15 feet overhead. Large ferns, vine maple, and salmonberry also characterize the "rain forest."

Forests of this scenic type are found in their supreme development only on the western slope of the Olympic Mountains and the west coast of Vancouver Island. They will soon disappear entirely, under the march of lumbering, except as preserved in national parks.

Development work at the Olympic National Park began in 1939 with a program for construction of an administration building, warehouse, garage, and superintendent's residence on the 36-acre administration tract at Port Angeles donated to the Government by Clallam County. The Civilian Conservation Corps built roads into this area and the Work Projects Administration landscaped it. Ranger and fire-patrol stations were built at Gray's Creek, in the Quinault country, and Lake Crescent.

An extensive trail building and repair program was put under way, the chief feature of which was a section of the Bailey Range Trail. This, when completed, will be one of the most spectacular hiking and horseback routes in North America. The trail has been so laid out that, weaving back and forth through a succession of small passes, the traveler alternately looks over the Elwha Valley and the Strait of Juan de Fuca on one side of the Bailey Range and, on the other side, across the Hoh Valley to Blue Glacier and Ice River Glacier on Mount Olympus. Eventually this trail will extend from the head of the Elwha Valley on the north to the Low Divide on the southwest, and will be a connecting link in a series of trails running completely across the park.

The Olympic National Park is to be maintained primarily as a wilderness park. There will be no concessionaire system, and no new hotel construction in the park. Tourist accommodations are plentiful along its borders, in the Hood Canal region, at Port Angeles, Lake Crescent, Forks, Kalaloch (on the Pacific Ocean) and Lake Quinault. Hotels and chalets previously operating in the park area will continue to do so at Olympic Hot Springs, Sol Duc Hot Springs, Gray's Creek, Enchanted Valley, Lake Cushman, and at Kelley's Ranch on the Queets just outside the park.

The paved Olympic highway encircles the park and passes through it in the famous drive along Lake Crescent. The present roads into the high country at Deer Park and Hurricane Hill, outside the wilderness area, will be improved and perhaps connected. The "rain forest" on the Hoh and the North and East Forks of the Quinault is traversed by roads; that on the Bogachiel and Queets is a roadless wilderness, and will be kept so. Approach roads enter the park on the Dosewallips River and North Fork of the Skokomish, favorite entry points for the people of Seattle, Tacoma, and Olympia. Motor camps will be established on the approach roads with trails leading to and over the central mountain wilderness, which is to remain roadless.

The State of Washington has ceded exclusive jurisdiction over the Olympic National Park to the Federal Government, which means that the Federal Government will keep the rivers and lakes stocked with fish, and visitors will not need a fishing license. Principal wildlife attraction is the Roosevelt or Olympic elk (named for Theodore Roosevelt), about 6,000 in number, scattered throughout the western river valleys in winter, and found in summer both in the high country and in the valleys. The black-tailed deer is native to these mountains, and black bear are found here. Dolly Varden trout and steelhead are the principal game fish in the rivers, though salmon also run up the streams.

Rainfall on the Olympic peninsula varies from 14 inches a year at Sequim, near Port Angeles, to an estimated 250 inches a year on Mount Olympus. In the accessible western "rain forest" valleys it ranges from 90 up to 150 inches a year, concentrated chiefly in the winter, and not interfering with summer camping. On the northern mountain sides is some of the best skiing country in the Northwest.

With both the Olympic National Park and Mount Rainier National Park inside its borders, the State of Washington is expected to draw more than its previous share of transcontinental visitors.

A movement which John Muir started 50 years ago came to realization in 1940. In July 1939, the House of Representatives passed Congressman Gearhart's bill to establish the Kings Canyon National Park in California. The bill went to the Senate, and was reported favorably without amendment by the Senate Committee on Public Lands,

but the adjournment of Congress two days later prevented a vote upon it. This left the bill upon the Senate calendar, and it passed the Senate in February 1940 and has been signed by the President.

Championed by the Sierra Club of California, the John Muir Association, and many other conservation bodies, the Kings Canyon Park project is looked upon as one of the outstanding efforts of modern times, to preserve and utilize a great scenic recreation area. This high mountain country lies immediately to the north of Sequoia National Park, and has the same massive grandeur as the adjoining Kern Canyon-Mount Whitney section of the latter park, but on a vastly greater scale. Containing little or no commercial timber, no mineral ores, and only a few small patches of grazing land, the Kings Canyon project faced only minor opposition based on such economic uses. The bill to establish the park was supported at the House hearing by the Chief of the Forest Service.

A powerful opposition developed, based on the claim that establishment of the park would interfere with utilization of Kings River water for electric power to serve the irrigation interests in the valley below and with flood control, but both the Commissioner of Reclamation and the Chief of the Army Engineers informed Congress that there was no conflict on these points—that all flood-control, irrigation, and power dams proposed on the river would be located outside the park boundaries.

The Gearhart Act incorporates the present General Grant National Park into the Kings Canyon National Park, calling it "General Grant Grove." The plan of administration is to concentrate all hotel accommodations in the General Grant sector, where they are now located, and develop a large auto camp at Cedar Grove, the terminus of the new State highway running up the canyon of the South Fork of the Kings. The high country from there to the crest of the Sierra Nevadas would be reached, as at present, by trails, and the same is true of the Middle Fork of the Kings, with its famous Tehipite Dome. Since it is estimated that a continuation of the highway over the mountains would cost \$14,000,000, and a much easier crossing can be made, if one is desired, just north of the proposed park, this wilderness policy is reinforced by financial and engineering considerations.

The new highway to be opened in 1940 reaches the most striking single feature of the park area, the South Fork Canyon at Zumwalt Meadow just above Cedar Grove. The walls of this canyon rise 4,000 feet above the river. Here are Roaring River Falls, and many cascades, and it is an easy hike to the magnificent Bubbs Creek Canyon and the tumultuous South Fork of the Kings below Paradise Park. The floor of the canyon at Cedar Grove and Zumwalt is broad and level for a distance of about five miles, with a parklike setting of great western yellow pines and incense cedars. It is destined to be one of the great recreation centers of the country.

The Kings Canyon project also led to the acquisition

by the Government of the famous Redwood Mountain and Redwood Canyon grove of giant sequoias, adjacent to General Grant National Park. Long known as the finest sequoia grove in private ownership, if not superior to those already in national parks, Redwood Mountain has been on the verge of lumbering operations for years. It contains more than 7,000 large sequoias, including the famous Hart tree, 32 feet in diameter at the base, which contains more wood than any other tree in the world. Secretary Ickes once gave the dimensions of this tree to an elevator company which reported that if it were cut off at a height of 160 feet above the ground, 114 persons could stand on the cross section of the trunk, 20 feet in diameter at that height.

The saving of these sequoias required the purchase of 4,000 acres of land. All the rest of the proposed park, totaling 454,600 acres, is owned by the United States and

merely needed to be given national park status to insure permanent protection.

While the Gearhart bill was in the House of Representatives, alarm was occasioned among conservationists by an amendment offered to it, which would have opened the national park to construction of dams and reservoirs. The plan, as outlined by its advocates, involved the damming and subsurface tapping of hundreds of high mountain lakes, and diversion of the rivers into tunnels. This amendment was defeated on the floor of the House, the chairman and other members of the Committee on Public Lands joining in the fight against it. The fact that such a proposal was made, involving a region which has been looked upon for years as a priceless wilderness, strengthened the demand among conservationists for permanent protection through national park status. The "power amendment" was not in the bill as it was finally passed.

STATE PARK LEGISLATION

by ROY A. VETTER, *Associate Attorney, National Park Service*

STATE PARK LEGISLATION enacted during 1939 is void of any definite trend. On the whole, it would appear that such enactments as are available for examination were designed to strengthen and refine existing laws in certain particulars which time and experience have demonstrated as being desirable.

However, the legislative year was not without highlights. An outstanding accomplishment was the creation of two new and comprehensive park agencies (Alabama and Montana), which leaves but one State (Arizona) without authority and responsibility in State park matters. In a number of other States the structure of the park agency was adjusted in various particulars. Also, in two States (New Mexico and Washington) new and unique sources of revenue for park purposes are being exploited. These and other provisions are set forth in the summary following:

Administration

Alabama created a State Department of Conservation as "an executive and administrative department in order to enable the Governor to exercise a direct and effective control over the natural resources, State parks and historic sites of the State and in order to bring together in one department for purposes of economy and efficiency all matters pertaining to the natural resources, State parks and monuments and historical sites of the State." The department is headed by and under the direction, supervision, and control

of a Director of Conservation, appointed by and holding office at the pleasure of the Governor. Divisions were created as follows: Division of Game, Fish and Seafoods; Division of Forestry; Division of State Parks, Monuments and Historical Sites. The act also created an Advisory Board of Conservation.

Montana created the Montana State Park Commission "for the purpose of conserving the scenic, historic, archaeological, scientific, and recreational resources of the State and of providing for their use and enjoyment, thereby contributing to the cultural and recreational life of the people and their health." The Commission is composed of three members appointed by the Governor. The State Forester is ex-officio Secretary of the Commission and the Director of State Parks.

Kansas increased the membership of the Forestry, Fish and Game Commission from three to six members, and provided for the appointment by the Commission of a director.

Maine abolished the Baxter State Park Commission, and placed said park under the joint supervision, control and administration of the State forest commissioners, the commissioner of inland fisheries and game, and the attorney general.

Massachusetts reorganized its Department of Conservation by creating five divisions, including a Division of Parks and Recreation (which supersedes the old Division of Parks),

for the management and development of State parks; also for the supervision of recreation activities on the State forests.

Ohio created within the Department of Agriculture a Division of Conservation and Natural Resources, to consist of a Conservation and Natural Resources Commission (as successor to the Conservation Council); also provided for a Commissioner of Conservation and Natural Resources. The Commission is to determine the policies of the Division, and to plan, develop, and institute programs and policies; is vested with authority and control in all matters pertaining to the wildlife, and is given the general care and supervision of the lakes constituting State parks, together with all other State parks and lands the care and supervision of which are not vested in some other officer, board or organization.

Oklahoma reduced the membership of the State Planning and Resources Board from seven to five members, to consist of the Governor, the State Budget Officer, and three citizen members appointed by the Governor with the advice and consent of the Senate.

Rhode Island provided for an Advisory Council within the Department of Agriculture and Conservation. The council is to make suggestions to and advise the Director of the Department concerning policies, rules, and regulations, except those relating to fish and game (an advisory council on fish and game being provided for by the act), but has no administrative power.

South Dakota abolished the State Park Board and the Custer State Park Board, and created in their stead the South Dakota State Park Board, to have the powers and duties previously delegated to the boards abolished.

Tennessee created a Conservation Commission as an adjunct of the Department of Conservation. The Commission is to serve as a trustee of the natural resources of the State and as a policy-forming body.

Extension of Park System

Maryland provided for a credit of \$100,000 to the State Department, of Forestry, to be used for the acquisition, improvement and development of forests, parks, and recreational areas.

New Mexico provided for a fund of \$250,000 for the purchase of lands for State parks. The money is to be raised by bond issue, to be repaid by a levy of 50 cents on each instrument filed for record in the offices of the county clerks, and a tax of 25 cents on each instrument filed in such offices which is not recorded.

Finances and Fiscal Procedure

Arkansas, which previously required all park revenue to be paid into the State treasury, authorized such revenue to be credited to the State park fund, whereas Minnesota, which previously provided that all revenues collected in the operation of State parks be credited to the various parks affected, to be used for the improvement and development of the park from which received, now requires

that all such revenue be deposited in and for the benefit of the general revenue fund of the State.

Connecticut increased the amount of service and sales fund of the State Park and Forest Commission from \$30,000 to \$50,000.

Washington provided that out of each fee of \$2 collected by the State for a vehicle operator's license, the sum of 20 cents is to be paid into the State parks and parkway fund.

State Park Roads and State Parkways

Connecticut requires the Highway Commissioner, upon direction of the general assembly, to lay out and construct any trunk highway as a parkway.

New Hampshire directed the State Highway Department to assume control of reconstruction and maintenance, at the expense of State highway funds, of roads designated by the State Forester and State Highway Commissioner within certain State parks and reservations.

Minnesota amended the State-aid Parkway Act to permit county boards, with the consent of the Commissioner of Highways and the Commissioner of Conservation, to designate any established road or specified portion thereof, "including portions lying within an established public park or recreational area," as a State-aid Parkway. Previously the provisions of the act extended only to approach roads to such parks or areas.

North Carolina provided for the extinguishment of any private right to operate any toll road or toll bridge through, in, or upon any lands owned and used by the State as a public park.

Montana authorized the State Highway Department, upon agreement with the State Park Commission, to construct, improve, and maintain with State highway funds connecting roads between existing State highways and lands and properties under the jurisdiction of the park commission.

Maine authorized the Governor and Council, with the special authorization of the legislature, to direct the State Highway Commissioner to lay out and construct any State highway as a parkway.

Alabama authorized the State Highway Department, upon the request of the Director of Conservation, to construct, reconstruct, and maintain, with State highway funds, roads within the boundary of any land included in the State park system; also roads leading from a State highway to any land included in the State park system. The Department of Conservation was also invested with jurisdiction in State parkway matters.

Texas authorized and directed the State Parks Board to acquire, build and construct parkways, roads, bridges and trails from public roads and highways to certain park sites.

Acquisition of Tax Delinquent Lands

Indiana passed an act enabling the State to acquire title to tax-delinquent lands suitable for conservation and land utilization purposes.

Ohio authorized the respective county auditors to transfer tax-delinquent properties to the Board of Control of the experiment station or to the Conservation and Natural Resources Commission, upon request of either of said agencies. Only those properties which have value as forest reserves, recreation, game reserves, or other conservation purposes may be acquired in this manner.

Local Park and Recreation Legislation

Legislation relating to local parks and recreation received merited consideration during the year, and added a considerable number of new and amendatory acts to the statute books. The provisions of these enactments are being incorporated in a digest of local park and recreation legislation now being compiled by the National Park Service, which will be available for distribution early in 1940.

THE YEARS AHEAD

by E. D. RIVERS, Governor of Georgia

WE GENERALLY RECOGNIZE that the history of a nation is almost precisely the history of the development of its natural resources. We may look back to the glory of Egypt along the Nile, when millions of tons of rich fertile soil were brought down in flood and spread upon the fields along the river. It is said that eastern Asia was once covered with vast forests and later with grazing land otherwise did by any other empire within the history of this eat with refenow the story of the rise and fall of the Mongolian Empire.

Here at home we find the great plains of the Middle West, the finest grazing lands of North America. Almost within our own life time, those lands have been overgrazed, the grass roots plowed out of the ground to make way for agricultural crops, and finally dried out and blown away by the ceaseless winds of the earth. Today the dust bowl of the Middle West stands as a senseless monument to man's slaughter of the goose whose eggs were solid gold.

What applies to a nation may almost universally apply to any part of that nation. The history of my own State is not without blackened pages in its record. There was a time when man cleared the forests for cultivation, piling monstrous saw logs in heaps and burning them to piles of ashes. These "log rollings," as they were called, were deemed necessary for the disposal of the trees. Georgia played its part also in the elimination of the passenger pigeon and in helping to decrease, by vast numbers, our resident and migratory birds. Our game bird and animal species began to decline in number when they became no longer necessary items in the diet of our pioneer citizens and became items of sport and amusement instead. In those early days few game laws had been passed. Game was considered the property of the individual, who was fortunate enough to bring it out of the fields and forests, and birds and animals

were killed without regard to nesting seasons or to birth of young.

In such a manner did we exploit this new land that we, as a people, settled. We conducted ourselves very much in the same manner as the man who has become newly rich. We knew that our wealth of resources was unlimited. We stood at the gateway to the kingdom of Midas, and in this rich new land of ours, prospered. We abused our wealth that seemed to have no metes and bounds.

We stripped the vegetation from our fertile hillsides and planted them in money crops, only to find that we were trading our birthright for a mess of pottage when the waters of our rivers became gray and then red from the washed and barren hillsides.

One day we awoke to find that we could no longer, by the mere touch of an ax or a plow, turn sticks and earth to gold. Our vast forest resources were almost depleted. Our rich soil lay in deltas at the mouths of our rivers. Our game birds and animals, and our fish were rapidly on their way to extinction. We suddenly realized that forest trees contained valuable lumber above that first cut off the stump. We suddenly realized that those streams, red with mud, were drawing out the life blood from our State, just as a red stream from our veins would draw the lifeblood from our bodies. We suddenly realized that our game birds and animals and our fish were a source of potential wealth unexcelled even in the industry or the agriculture of our State.

I thank my God that we, as a State, have come to our senses in time. I am thankful that we did not awaken to find our lands as barren and fruitless as the Shamo Gobi. I am thankful that our resources are not entirely depleted, or exhausted, and that we can begin anew, with humble and contrite hearts, to build back the natural wealth of our empire.

Personally, I find a great deal of satisfaction in believing that the most inspirational examples of all our natural resource wealth and advantages are embodied in our parks; on a larger scale, in our national parks. I find pleasure in the realization that those areas we have selected and put aside, are dedicated to the new ideal upon which we have begun to build our program of intelligent use and wise conservation. I like to think that perhaps the public itself, upon its pilgrimage to those spots of grandeur, will catch some of the spirit with which those parks have been dedicated; for it is only through wise human application that our natural advantages may be economically developed and brought successfully to full fruition.

Whether we are right or wrong, we like to feel that during the past few years, Georgia has been unexcelled among the States of the Nation in the development of her State park program. Not in the number of our parks, for during that time we have only increased the number of select park areas from 8 in 1937 to 21 at the present time. Not in acreage, for where our State parks contained almost 5,000 acres when the Division of State Parks of the Department of Natural Resources was established, only 32,000 acres are under the management of this Division today. That is far, far behind the area devoted to State parks in many of our sister States. Not in the attendance at our State parks. How can we compete with 15,000,000 visitors each year to Bear Mountain, one of New York's outstanding parks? Certainly not in money set aside for development and maintenance of those areas, although our appropriation was lifted from exactly zero to \$50,000 per year by the legislature.

You wonder, perhaps, why we are proud of our record during the past 3 years. Perhaps you wonder why, out of 23,000,000 acres of forested land in our State, we could not set aside literally millions in our State parks, or why the parks fund could not match the highway fund of \$28,000,000 each year.

I am proud of the physical record we have made in less than a thousand days; but my deepest satisfaction is in the fact that of our 3,000,000 Georgians, there remain only a few who do not know and recognize the value of our State parks. That, I feel, is one of my real contributions to the happiness of the people of my State. As a Georgia long-leaf pine must put its roots deeply into the earth before its top shoots skyward toward the sun, so must a new idea or a new ideal have the enthusiastic support of a people before it can flourish and prosper. What then, with the preliminary steps behind, do the years ahead hold for State parks in Georgia? If the plan we have proposed and set into motion does not fail, those years will be fruitful in their contribution to the health and happiness of our people. Into those plans are woven the thread of each natural and divinely endowed advantage of our State.

It is not necessary to recount one by one each State park in Georgia. It is only necessary to state that they lie from the crest of the Blue Ridge to the tidal marshes of the

Atlantic, and that they represent each period in a history that is so vital to us all. It is not necessary to tell in detail of the development of lakes and railways and cabins, of inns and lodges and concessions developed by the Civilian Conservation Corps through the National Park Service. We know how insufficient they are to meet the demands made upon them. It is necessary to outline the plan that means so much to every citizen of Georgia and to every visitor who comes into our State. Our parks program is in a continuous era of expansion. Almost daily our engineers are inspecting new sites to determine whether they are important enough scenically or historically to be preserved. It is our desire eventually to have one of these areas within reach of and used by every Georgian.

Not all of those areas are to be dedicated as State parks. Not all of those areas are outstanding enough to be dedicated as State parks. Only six areas will be dedicated as primary State parks—three in the mountains, one in the Piedmont Plateau, one in the coastal plain, and one on the coast. Those parks will be head and shoulders above all the other parks of the State in providing outstanding recreational facilities, in scenic splendor and in the concentration and preservation of our natural resources.

Our secondary parks will be county recreational areas, devoted to those persons living within 25 miles of the park. The type of development will depend entirely on the type and extent of the population within the 25-mile radius. Those parks will not be maintained by the State, but will be turned over to local committees, of which our parks director is ex-officio a member. All funds for maintenance and development will be supplied and utilized by the representative committee.

We have designated our demonstration parks as "Natural Resource Reservations." On those areas the development will be inconsequential, and the land devoted primarily to demonstration of good forestry practice and to game management.

Our classical parks will be numerous and, as a rule, small. They will represent the historic and prehistoric sites of the State and will be designated to the memorial areas of Georgia. We shall connect our parks with parkways, scenic drives, and memorial highways, and will concentrate upon the beautification of those roads.

We realize that we cannot develop such a program as I have outlined in a few short weeks or months. Years may be required to build to the blue prints of our plan; but we do feel that during the past 3 years the beginning of our program has been laid on foundations that are as solid and substantial as the core of the earth itself. We shall continue to dedicate our efforts to the years that lie ahead, with the fleeting hope that some other generation of the future can look back and understand, in a small way, why I have made State parks one of the important points in a program designed to give my people a more comprehensive understanding of their heritage and a deeper appreciation of life.

THE FUNCTION OF COUNTY PARKS

by CHARLES G. SAUERS, *General Superintendent, Cook County Forest Preserve District, Illinois*

IN THIS STATEMENT county parks shall include parks, reservations, forests, and forest preserves, owned and operated by counties or their counterparts, in contrast to municipal, State, or National parks.

County park systems have come to be considered a necessity in areas of large urban population. They are satellites of the cities. From the standpoint of the planners and various professional groups involved, they are usually hybrids between municipal parks and State or National parks, taking various complexions: as, for instance, a definitely municipal type in the case of Union and Essex Counties in New Jersey, and the reservation type such as the Cook County Forest Preserve District, Illinois, which is definitely an attempt to preserve a native landscape and forest. Both types are found under one management in the Milwaukee County System.

Sociologically the county systems fill the demands of the huge low income groups, common to large urban centers, ordinarily not met by State and National parks. These groups are prevented by income, lack of personal transportation, and time from visiting State and National systems. They look to the county systems to give them the delights of native landscape, undirected and unorganized activities, and great spaciousness which they are otherwise denied.

Several schools of thought are extant with reference to development and use of county systems. The writer is of that school which believes the functions of county systems are to furnish great natural areas that should not be subjected to development with playgrounds, field houses, and the like. These organized, tightly controlled, and intensive activities have been, and should be, developed within municipalities to meet the needs of children exposed to extreme urban conditions. They are instruments of prevention against crime and delinquency. County park systems are not counter irritants of that sort but through spaciousness and naturalness should offer a milieu of freedom and contrast essential to the spiritual and cultural demands of a people otherwise denied them.

The child at mid-high school age assumes independence of movement, choice of activities and dislike of being led and organized. From this age on through life his needs are for space and freedom of movement, for spiritual and cultural values, which he finds in a county system as here defined and described.

It is the province and the responsibility of the municipality, be it city, town, or village, to furnish organized recreational facilities easily accessible from the home. Administrators of county systems in juxtaposition to municipalities have found they must be alert to prevent municipalities from dumping all their recreation problems in the

counties' laps. When the municipality is built up it finds itself with an urgent and serious neighborhood recreation problem which the county cannot and should not attempt to solve, and which is well-nigh insurmountable by the municipality.

Despite the usual concept of a county park as part of the land plan of a metropolitan area, there actually exists a justification for such reservations in rural and lightly populated counties. In this latter case the need is for a simple area, possibly only one per county, in the form of a picnic grove and gathering place where the people who are subjected to isolation may have the opportunity to be gregarious with their neighbors and with other citizens of the county on Sundays and holidays. This need is as important to such peoples as is the need for solitude and revitalization to the city dweller.

This discussion, however, is confined to reservations available to the larger, heavily populated districts and it seems the simplest way is to illustrate at least one policy, and one method, to describe the purpose, principles and methods pursued by the Forest Preserve District of Cook County, Illinois.

This district, a separate municipality within the County of Cook, is empowered by law to "create forest preserves, . . . for the purpose of protecting and preserving the flora, fauna, and scenic beauties within such district, and to restore, restock, protect, and preserve the natural forests and said lands with their flora and fauna, as nearly as may be, in their natural state and condition, for the purpose of the education, pleasure, and recreation of the public."

The forest preserve proposal was originated and developed by Chicagoans in the nineties, which after all were none too gay and certainly in this respect truly serious. Various attempts were required before a law was passed in 1913, which could be proved constitutional. In 1910 the Cook County population was 2,405,233. The future of the automobile was seriously questioned and highways were still on a farm to market basis. Access to the countryside just beyond the city limits was largely by horse and buggy or railroad. Any natural area coming into public ownership was truly remote and inaccessible to the great body of Chicago citizens. There was but little worry that wheel and foot would trample down the flora and scare the day-lights out of the fauna.

Today the 34,000 acres of Cook County forest preserves are surrounded by a population of over 4,000,000—the conservative estimates for 1940 are 4,450,000. The holdings of the district have 185 miles of highway and street frontage. The population which it serves has 750,000 automobiles. Access is to be had in addition by walking, bicycle,

street car, elevated and electric lines, and steam road. Thirty-four thousand acres are within a minute's to a half hour's reach of 4,000,000 people. Let us join them in singing, once over lightly, the "Paradoxology"—but on a theme of "protecting and preserving the flora, fauna, and scenic beauties" of 34,000 acres with 4,000,000 people. The theme is difficult and may seem full of dissonances, but the forest preserve district is attempting, successfully, to produce a harmonious opus therefrom.

The problem, then, is the preservation of the major portion of a fine hardwood forest landscape, much of it in truly native condition, in the face of its use by a great metropolitan population both racially and socially heterogeneous. Certainly the measure of success shall be the number of people that may be introduced into this landscape for recreation and revitalization while most of the acreage is maintained in its native condition.

With the size of population and high degree of accessibility indicated, the problem is not the encouragement of use, but rather the control and direction of use into ways of real benefit to our people and of least damage to our landscape. The problems are those of dispersion of human load here, congregation there, automobile control everywhere, complete prevention of special privileges and the giving of permission and encouragement only to those individual, group and mass activities congruous to the objectives.

The great bulk of the human load is in the form of Saturday, Sunday, and holiday picnics in human units of from 1 to 10,000; 5,777 permits were issued to September 1 in 1939 for picnics of 50 or more. Then there is the daily load of family outings, couples afield, child groups, youth campers, hikers, equestrians, cyclists, nature students, and mushroom hunters in season. Added to all this are the group play activities confined to baseball in meadows, golf on seven courses, swimming, and winter sports.

No organized recreation is provided and there is no provision for indoor activities other than open shelters.

All design of landscape construction in the district is made to submit to the principle that the existing topography must have the least possible disturbance, and any existing tree is practically inviolate.

All planting is confined strictly to species native to the area and is so selected and placed as to result in a native appearance.

All architecture—and as little of it as possible—is simple, rugged, rough-textured and of native materials.

The major construction problem of the forest preserve district is that of automobile control. First, actually to prohibit entrance by automobile except into prepared spaces, and second, by the use of the parking area to limit the load of people in given areas and the dispersion of people within the capacities of the landscape. Since most of the topography is either quite flat or only slightly rolling, access must be prevented from much of the long highway frontage; and after access is permitted the cars must be corralled by

barriers of wood, stone, concrete, or impassable V ditches. Fortunately all of the necessary construction, subsurface drainage, surface drainage, barrier and ditch are in a horizontal plane either close to or beneath the surface of the ground. Moreover, the forest may be brought up to the barrier.

The natural aids contributing to a solution of the problem are various. The days of peak load, when from 400,000 to 500,000 people are found on the holdings, are confined to summer Saturdays and Sundays and holidays, approximately 30 days a year. Coupled with this are the hardness and lustiness of the hardwood flora, adequate rainfall, and much better than average soil. The holdings of the forest preserve district lie on lands which ordinarily would have been cleared and converted to agriculture, and as a matter of fact a good deal of the acreage is made up of purchased farms which had large wooded areas on them. These various factors work to our advantage in the preservation of the forest.

Another natural aid is the presence of considerable swamp and marsh areas from which the black soil or peat may properly be robbed for use in bolstering up areas of heavy use.

Among the more artificial aids are the use of pressure feeding by air and water in areas of impaction and concentrated use.

The greatest artificial aid, however, is control through planning and operation. As indicated above, control may be secured through the distribution and size of parking spaces. This method is carried another step by either the discontinuance of use in areas in bad health, or the complete salvaging of areas by actual removal of parking spaces and the restoration of the forest flora. Experience has proved that a further aid is an insistence upon thoroughness in design, excellence of construction, and completeness of maintenance.

The district offers no organized recreation and no indoor activities or facilities such as field houses. Its administrators believe that organized recreation belongs in the truly municipal park system and that to extend it into natural reservations will inevitably lead to overexpansion and to the dilution of the principles and purposes for which such reservations are founded. Although it operates three large swimming pools and seven golf courses, it might well be rid of them and thus be permitted to abide by a strict reading of the statute founding the district. The forest and meadow landscape is a boundless resource for the "education, pleasure and recreation of the public" without the introduction of extraneous projects. The problem is for education, propaganda, precept, and whatever means to give the public a sense of direction which will lead them to the intelligent use of this landscape. No effort or method for the preservation of the forest and its natural inhabitants is neglected. The extent and variety of the wildlife population are notable. One hundred fifty miles of hiking, bridle, and bicycle trail of the simplest type is provided. Nature



Catching them the old-fashioned way.
(Cook County Forest Preserve District Photo.)



City boys hike along a wooded trail.
(Cook County Forest Preserve District Photo.)



Ice skating on Evergreen Lake, Dedisee Park, Denver Mountain Parks, Colorado.



Approaching the Craggs in Castle Craggs State Park, California. Mountain lakes and streams afford fine fishing in this area. (*California State Parks Photo from Schoeb.*)



Outdoor theatre in Armstrong Redwoods State Park, California. (*California State Parks Photo from Schoeb.*)



Santa Monica Beach State Park preserves valuable public beach frontage in a congested region. (*California State Parks Photo.*)

study is taught in a trailside museum and our program calls for half a dozen of these, strategically placed.

The administrators believe that the paradox of 34,000 acres of natural landscape within a metropolitan area of 4,000,000 people is capable of solution. They believe that

the solution lies in a tenacious holding to the original concept and the strict reading of its charter.

Upon this tenet they are committed to a never-ending battle with well meaning and sincere citizens or groups of citizens to prevent the dilution of these principles.

CALIFORNIA'S INVESTMENT IN STATE PARKS

by **NEWTON B. DRURY**, *Acquisition Officer, California State Park Commission;*
Secretary, Save-the-Redwoods League

IF CALIFORNIA, as many believe, has built up in her State park system an investment with increasing value for the future, it is because this has been done according to a definite program and a comprehensive plan.

In the past 10 years this investment has increased from \$1,000,000 to \$15,000,000; the number of parks and monuments from 14 to 70; their extent from 13,000 to 300,000 acres. In fact, the unified system dates from legislation of 1927 whereby there was created a central State Park Commission with authority to control policies and administration, a State park survey authorized, and a State park bond issue of \$6,000,000 (to be matched in equal amount with gifts) provided, and in November 1928 ratified by popular vote of almost three to one. The process of acquisition thus got under way in 1929.

A Balanced Program

Having, as a commonwealth, assumed this responsibility, the State concerned itself with one of the cardinal principles of good investment—the effort to attain diversity and balance. It was determined that acquisition would not be hit-or-miss, but would be based on the major needs and opportunities revealed by study and analysis. One of the first acts of the newly created State Park Commission in 1927 was to appoint as director of the State park survey Frederick Law Olmsted, well-known landscape architect and student of park matters throughout the Nation. With assistance, both technical and volunteer, a State-wide inventory was made of those resources that might well be conserved in a State park system. No major possibilities were overlooked. Recognizing the existing wealth of outdoor areas already preserved in California's national parks and national forests, it was found that nevertheless there was need to supplement these resources if California was to safeguard for all time representative examples of her scenery, recreational lands, and sites of historic interest.

Some 325 projects were investigated under the State park survey, and 125 recommended by Mr. Olmsted for further

study and acquisition. The present 70 State parks and monuments largely represent areas thus determined. Using the State park survey of 1927 as their guide, successive State park commissions, in approving the purchase of lands have, in remarkable degree, adhered to the recommendations and principles of this report. The areas thus far acquired represent, both as to types and as to geographical distribution, a well-rounded State-wide system of parks. There are few outstanding areas that should still be acquired, and there are acquisitions necessary to complete and round out existing parks, but in large measure the program of the Olmsted Survey has already been fulfilled.

In formulating a comprehensive plan for its State park system, California had the advantage of leadership and guidance from men like Dr. John C. Merriam, president emeritus of the Carnegie Institution of Washington, who, as president of the Save-the-Redwoods League, drew attention to the responsibility of the State in this regard; Duncan McDuffie, former president of the Sierra Club, who headed the organization which carried on the campaign for the passage of the State park bond issue; Wm. E. Colby, friend of John Muir, active in national park matters for over 30 years, and chairman of the California State Park Commission for the first 9 years of its existence. These and many others, with the aid of conservation organizations in many parts of the State, were able in the early stages to set the pattern which has been followed consistently by subsequent park commissions.

At the beginning, while the park survey was going on, the State Park Commission issued a statement from which the following quotation indicates their conception of the opportunity that lay before California:

State Parks—What Are They?

“State parks are lands held and managed by the State expressly for the purpose that the people of the State shall be able, by access to them, forever, to enjoy certain things of State-wide interest and importance of which the people

would otherwise become deprived. Chief among those things are: (1) natural scenery of unusual beauty; (2) natural objects of unusual educational and scientific value, such as rare kinds and combinations of trees, plants, and wildlife, and of forms of earth, rocks, and waters; (3) objects of State-wide historical interest; (4) areas specifically adapted to such activities as camping, boating, fishing, bathing, hiking; and others characteristic of life in the open. All with special reference to their inspirational and recreational value for refreshment and upbuilding of body and mind. . . .

"Some State park areas will be valuable for and mainly devoted to special forms of outdoor recreation, such as picnics, camping, fishing, bathing, etc. Some will be essentially museum pieces, to preserve to the people forever, in their utmost perfection, notable examples of natural scenery and objects of educational, scientific, or historic interest, made accessible to the public in such ways as will permit their enjoyment without impairing their excellence. Some will be chosen and managed primarily for enjoyment from automobiles, others for kinds of enjoyment not to be obtained in perfection in the presence of automobiles; some for enjoyment that can be shared by a multitude, others for enjoyment that requires solitude and isolation."

There thus was set up a criterion whereby the park system came to be conceived as grouping itself logically into three main categories:

1. *Scenic reserves*, to be administered so as to hold intact the natural conditions upon which their beauty and interest depend, making them available for public enjoyment in such a way that their use will not destroy the very qualities that justified their acquisition. Typical examples are the Redwood groves such as Bull Creek Flat, Point Lobos Reserve, the Anza Desert, and the wilderness area at the summit of Mount San Jacinto.

2. *Recreational parks*, such as the ocean beaches of the south, the camping areas in or adjoining certain of the Redwood groves, and other properties devoted to various sorts of outdoor activity. The extent and types of development were determined by the Commission's policy as to the use for which such areas were acquired.

3. *Historic monuments*, including sites or structures typifying important episodes in California's colorful past, including the influence of Spanish, Mexican, Russian, and Early Californian regimes.

Of necessity, these classifications could not at all times be mutually exclusive. There are some holdings, different portions of which are dedicated to one or the other of these three primary uses; but by attempting to establish clearly the highest value of each area to the public, reasonable success has been attained in avoiding both ill-planned development and hit-or-miss acquisition.

Striking a balance among these types of use has not been a simple task, and constant review and shifting emphasis, based on continued study, are necessary on the part of the Commission and its officers. It is pretty well

established, however, that of the 70 existing parks, 20 are to be considered primarily as reserves, 36 to be administered as mainly recreational, and 14 to be interpreted for their historical significance.

There are many examples of how this policy as to primary use governed the course of acquisition of properties. One that may be given is that of the region of Monterey Peninsula. Here, Point Lobos was acquired at great expense to be held as a reserve. The very purpose to which it was devoted as a great natural spectacle precluded intensive human use. There could be no camping or large gatherings such as organization picnics, no fires because of extreme hazard to perishable values. Roads and trails must be kept to a minimum, and structures reduced to the necessities of administration. Yet there was need in that locality for more extensive recreational facilities, and to meet this, and relieve possible future pressure for inappropriate uses of Point Lobos, the Pfeiffer Redwoods, formerly a resort on Big Sur River, 30 miles to the south, was acquired. Here there are camp grounds, a lodge, a swimming pool, an outdoor amphitheater, and other features appealing to devotees of outdoor life.

A State-wide System

Another control, besides that of function and type of use, entered into the building up of a balanced State-wide system. This was the matter of geographical distribution. For more reasons than one, there had to be some sort of balance between the northern and southern parts of the State, between the coast and the interior. This the Commission has attempted to attain. There has been, however, no narrow sectionalism displayed in California. Citizens of Los Angeles County are proud of the Redwood parks of the north, and have contributed liberally toward their preservation. There are times in the summer season when more than half of the campers at Big Basin are from Southern California. Similarly, the people of the north and those from the San Joaquin and Sacramento Valleys seek recreation at the ocean beaches which because of climatic and other conditions are at their best in the southern part of the State. One important factor, besides the fact that population in California is concentrated largely along the coast, has resulted in relatively few areas being acquired in the eastern portion of the State, and the Sierra. National parks and national forests, which the State park system aimed to supplement, have largely cared for this region. There are exceptions, such as Calaveras Big Trees and Burney Falls, Mount San Jacinto, and Lake Tahoe, where important opportunities would have been lost if Federal action had been waited for. But in the main this region has been considered the domain of the Federal Government. For instance, the Redwood Canyon Sequoia Grove in Tulare County was urged and investigated for a State park, but since it lay on The General's Highway between Sequoia and General Grant National Parks, the judgment was that it should be preserved by the United

States. It has recently been acquired by the National Park Service.

Of course, geographical considerations in many cases could not govern. Availability, relative cost in proportion to public value, and many other matters entered in. Then, again, as to historic monuments, they had to be located wherever significant events took place. And scenery had to be preserved where it attained outstanding quality.

There was still another classification as to types of areas, the division into Redwood Parks, Seacoast Parks, Mountain Parks, Desert, Lake and River Parks, and Historic Monuments. The thought has been kept in mind that the best examples of each, in proper proportion, should be incorporated in the system.

These were some of the considerations that entered into the large program of acquisition which got under way in 1929. Some park properties had of course been previously acquired. In 1887, as might logically be expected, the first purchase was that of a site for a monument to commemorate James W. Marshall, who had in 1848 discovered gold near Coloma, El Dorado County, and had started the westward rush of Argonauts which marked a turning point in the history of California. This was near, but not *at*, the actual spot where the discovery was made. This site is now under consideration. At intervals other parks were established (and administered by separate boards and commissions), for the most part spots of historic interest, but including also, in 1902, Big Basin Redwoods, Santa Cruz County, officially known as "California Redwood Park;" in 1920, beautiful Burney Falls, Shasta County (gift from Mr. and Mrs. Frank MacArthur); and in 1921 a beginning of Humboldt Redwoods State Park.

In fact, it was the cry of "Save the Redwoods" that led to a realization in California that if the reputation of this State for scenic beauty, outdoor life, and historic tradition was to be perpetuated, not these great trees alone but all the most typical and precious of the lands upon which this fame depended must be preserved in public custody, safe from destruction and exploitation, before it was too late.

Saving the Redwoods

Not only our own citizens, but travelers from throughout the world, had long recognized the importance and urgent necessity of saving the Redwoods. The giant Sequoias, making their last stand on the western edge of the continent, are of two species—the Big Trees, or Sierra Redwoods (known botanically as *Sequoia gigantea*), preserved (except for the Calaveras North Grove State Park) in National Parks and Forests; and the Coast Redwoods (*Sequoia sempervirens*), which it was most fitting that the State itself should save, for of all natural features these Redwoods are most distinctively Californian.¹

Remarkable for their great size and their age, even more remarkable for the massed beauty of their forests, these

Redwoods are a living museum of antiquity, extending in age beyond the beginnings of our Christian era. To enter a Redwood forest is to transport oneself into an environment not unlike that of hundreds of thousands of years ago. In Humboldt and Del Norte Counties, where the *Sequoia sempervirens* reaches its supreme development in a setting of rich associated flora, more than 30,000 acres have been preserved in State parks representing a cost of over \$6,000,000. Extending for 30 miles along the Redwood Highway, these majestic colonnades are assured of preservation for all time. But more important still, away from the beaten track, and unpenetrated by automobile roads, large units of virgin forest have been incorporated in the State reserves with all their primitive qualities undisturbed, capable of being held untouched by artificial intrusions for many generations to come.

These are in four main areas. Within the 20,000-acre Humboldt Redwoods Park, 45 miles south of Eureka, the Bull Creek watershed has been preserved almost intact from ridge to ridge. At its heart the heavy stands of giant redwoods on a thousand acres of extensive flats, from South Fork of Eel River 4 miles west along Bull Creek, make up one of the greatest of all forest spectacles. The comparison to a mighty cathedral has been often made, yet there is no other simile to express its overwhelming effect. "Dim, lofty, pillared, peaceful, this temple which the Great Architect has been building for a score of centuries is incomparably nobler, more beautiful and more serene than any created by the hands of man." Aside from the main highway, approached from the south through a series of impressive memorial groves, and from the north over the privately owned "Avenue of the Giants," which the State is now acting to save, Bull Creek Flat represents the climax of a trip through the Redwoods.

The Prairie Creek Redwoods, to the north of Eureka, near Orick, make up another large primitive tract, quite different in prevailing atmosphere, more somber, the dense and even stand of redwoods interspersed with spruce and fir and hemlock, with broad-leaved maples along the stream, the forest floor luxuriant in great tangles of shrubs and giant man-high ferns. Then going northward one comes to the Del Norte Coast Redwoods, 7 miles south of Crescent City, where rugged seascape vies for attention with redwoods growing almost to the ocean's edge, and thickets of rhododendrons which bloom in the early summer. Comparable in impressiveness are the Mill Creek Redwoods, northernmost of the outstanding groves, where a large beginning has been made upon the fourth of the main projects outlined years ago by the Save-the-Redwoods League.

Preserving the Beaches

Saving the Redwoods was one opportunity before California in 1927. Then there was another opportunity of primary importance. It involved the urgent necessity, before it was too late, of acquiring for public use and enjoyment representative areas of shore and beach, particu-

¹ Some of the Coast Redwoods are included in Muir Woods National Monument—Ed.

larly along the Pacific Ocean, which for over a thousand miles on the west, borders the State of California. Except for a few local recreational beaches, practically all of the California coast line was privately owned, and the best of it threatened with exploitation. The public, long accustomed to look upon access to the seacoast as part of their natural heritage, were being rapidly fenced out.

This realization, particularly in Southern California where the ocean beaches have such a vital part in the life of the people, was one of the important reasons for the overwhelming vote in favor of the State park bonds.

It was only logical, therefore, that in the creation of a system of State parks, preservation of shore and beach should play a major part. Of the 70 units in the system today, 26 are located on the shore of the Pacific, and include ocean frontage. Twenty-three of these possess stretches of sandy beach—some of the best for ocean bathing in the State—varying in length from a few hundred feet in the smaller parks to several miles in those that are more extensive. In all, some 43 miles of ocean frontage have been acquired, of which close to 30 miles comprise sandy beach, and the remainder spectacular rocky coast so characteristic of parts of northern California. In addition, the State parks include 25 miles of bay and lagoon shore, 5 miles of lake frontage, of which 3 are on celebrated Lake Tahoe between Rubicon Point and Emerald Bay; and over 20 miles of river bank, notably in the Bidwell Park and Humboldt Redwoods Park. In all, over 104 miles of ocean, bay, lake, and river frontage have thus far been dedicated to public use in the California State parks.

It is in southern California that the principal State beach parks have been established—three in San Diego County: Silver Strand, a picturesque sand-spit near Coronado extending almost to the Mexican border; Mission Bay, with 12 miles of bay shore and 2 miles of ocean beach; and Carlsbad Beach; two in Orange County: San Clemente and Doheny Beaches; three in Los Angeles County: at Santa Monica, Manhattan, and Alamitos Bay near Long Beach. Here, in the most populous section of the State, the summer attendance runs into the millions. At Carpinteria Beach, Santa Barbara County, is another State park; and at 17 other points distributed at intervals along the entire coastline almost to the Oregon boundary there are beach or seacoast parks.

Other Types of Parks

Yet, while the rescue of Redwoods from destruction, and beaches from exploitation, might be said to be the core of the program in California, there are other types of areas which have been judged worthy of preservation.

Chief among these are the mountain parks, preserving distinctive scenery and offering much in the way of recreation, at Castle Crags in Shasta County; Mount Tamalpais, Marin County, with an open-air amphitheater on its slopes overlooking San Francisco Bay; Mount Diablo, Contra Costa County, a scenic drive leading to its summit, from

which on a clear day 35 of the State's 58 counties may be viewed; Fremont Peak in San Benito County; and, in the south, three areas which in their coniferous forests and high meadows have distinct Sierran quality—Mount San Jacinto, Riverside County; Palomar Mountain and Cuyamaca Rancho, San Diego County.

Destined to be more famous as the lure of the desert becomes better known, the extensive Anza Desert State Park, over 200,000 acres in eastern San Diego County, offers spectacular views of arid lands surrounded by rugged mountains, and beside affording a healthful winter climate, holds much of varied interest, with colorful displays of the flowering red ocotillo and other desert plants, including many cacti and groves of native fan palms hidden along streams in rocky canyons.

State Historic Monuments

Quite different in their purpose and character are the 14 State historic monuments, commemorating chief episodes in the State's romantic past. Typical of these are Fort Ross, Sonoma County, an outpost of early Russian settlement; San Juan Bautista Plaza, San Benito County, with its century-old adobe buildings of the Mexican regime; the Custom House at Monterey, where Commodore Sloat took possession of California for the United States in 1846; and La Purisima Mission, Santa Barbara County, now being extensively restored by the CCC under National Park Service technical supervision in cooperation with the State, as a reminder of the days of the padres.

These diverse properties out of which California has built a State-wide system represent 10 years of study, analysis, evaluation, and prolonged efforts to acquire them.

Even after the selection of these areas was determined, there was in each case a long process of negotiation, appraisal, surveying, clearing of title, and running the gauntlet of governmental procedure before purchase was consummated. In relatively few cases it was necessary to acquire under the right of eminent domain, given the Park Commission under the act of 1927. Existence of this latent power doubtless has assisted in arriving at prices which were fair to the owner and to the public. Since 1929, close to 300 parcels of property have been acquired for park purposes; and of these only 6, representing a value of \$88,000, have been condemned. In practically all cases the court or the jury (which the defendant or the State may demand at option) has set a value approximately that originally offered by the State. Owners of properties have practically always proved most cooperative, many making gifts of lands or concessions as to price.

Gifts to Match State Funds

The matching provision under the bond act, and under recent legislation, while sometimes a deterrent to acquiring a desired property, for the most part has unquestionably operated beneficially for the State. Possible "pork barrel" projects, or purchases promoted on a basis other than the

worth of the properties as a part of the park system, have been discouraged by the fact that half the value must be contributed. If the public need is patent, it has generally been found that individuals or communities have been willing and able to raise the necessary matching funds. There have been some exceptions. For example, one case is that of the Petrified Redwood Forest near Santa Rosa, an area which is being well protected under private ownership, but which ought ultimately to find its place in the series of Redwood parks; for here, turned to stone, lie trees of millions of years ago, testifying to the antiquity of a once widespread species whose descendants are making their last stand on this far western coast. Another case is that of South Calaveras Grove, toward which recent initial appropriation has been made, and toward which it is hoped matching monies will be found. Still another is the Old Mining Town of Columbia, Tuolumne County, its main street lined with brick buildings guarded by heavy iron shutters, quaintly reminiscent of the days of gold. It is hoped that contributors will be able to assist in holding intact this early community before modern "improvements" have destroyed its atmosphere.

Yet in the main the matching principle, insisted upon by Gov. C. C. Young when he approved the idea of a State park bond issue in 1927, has brought large benefits. Since the beginning of the State park program, gifts have amounted to almost \$8,000,000, as contrasted with \$7,000,000 expended by the State. Most of this excess of \$1,000,000 was obtained under the matching provision of the bond issue. The advantages were twofold. The prospect of matching contributions has encouraged legislative appropriations and the fact that one dollar contributed will mean two expended for parks has stimulated private gifts. When the campaign was on to save the celebrated Bull Creek Flat, John D. Rockefeller, Jr., who had already given \$1,000,000 toward it, pledged another million, on the condition that an equal amount be raised from other contributors. When the campaign got under way, the extent to which funds "pyramided" was astounding. A contributor of \$25,000 for a memorial grove, for instance, was assured that his gift had fourfold value, since it was first matched by Mr. Rockefeller, and then the total matched under the State bond issue, making a grand total available through his act of \$100,000. It was thus that the Bull Creek and Dyerville Flats, the Del Norte Coast Park, and other Redwood parks were acquired. The memorial grove idea has been very important in encouraging gifts, especially when these are matched by the State.

Many interesting accounts could be given of the way in which contributions have been obtained to match State funds. Some 40 memorial Redwood groves represent gifts from all over the United States. Several counties have appropriated funds. The Garden Club of America, the California Federation of Women's Clubs, and the Native Daughters of the Golden West are among organizations that have preserved Redwood groves. Generous citizens,

some of them preferring to remain anonymous, have contributed to other parks. One instance was that of a group of World War veterans who decided, in order to aid in acquiring a property which they considered of great public importance, to overcome their unwillingness to apply for the soldiers' bonus. It happened that the property was being purchased from the Federal Government, so that the funds thus drawn from the Treasury were almost at once returned.

An interesting, and for California, a very important application of the matching principle occurred in the acquisition of Point Lobos Reserve. Described by a noted artist as "the greatest meeting of land and water in the world," this distinguished example of California's coastal landscape, with its grove of wind-blown Monterey Cypress, stood with the Redwood forests as a major objective of the State's program of scenic preservation. State funds were available toward it, but private gifts to match these funds were coming slowly. Meanwhile the area was under the threat of commercial subdivision which had been the fate of land around it. It was found that contributions toward the Redwood parks (among which was one of \$500,000 from Mr. Edward S. Harkness toward Prairie Creek Redwoods) were in excess of the amount which the State had set aside to match them from the bond issue. The attorney general ruled that though expended for Redwoods, these unmatched excess funds could legally be matched through issuance of bonds for the purchase of Point Lobos. Thus was established one of the gems of the California State park system.

The Future Program

Any governmental function is shaped by accumulated experience of its administrators, by the needs of the people, and by prevailing currents of thought. The pattern of the State park program in California, however, appears to be rather definitely set. Acquisition of lands is only the beginning, but of necessity has been governed by anticipation of future trends of policy in other matters, such as development, protection and interpretation to the public of the values inherent in their own properties. All this involves public service of the highest order, worthy of the best thought that can be brought to it.

Looking to the future, California State park authorities like to conceive that there has been established an orderly program of acquisition for the next 10 years at least. Recent legislatures have provided for (1) the purchase of lands in installments through lease-options extending over a period of years; (2) the allocation for park purposes of 30 percent of royalties collected by the State from oil-drilling leases on State-owned tidelands; and (3) appropriation for the current biennium from these royalties of \$325,000, to be matched in equal amount toward initial purchases, as part of a continuing program, of Redwoods, beaches and other park lands. It is expected, however, that future expansion of the system will take place, not so much through

adding new parks, but more through rounding out existing parks and monuments so as to protect their surroundings and attain satisfactory administrative units. One exception to this principle may be in the case of much-needed recreational beaches, particularly in Southern California. There has been some discussion of the possibility of making greater provision for this purpose from an unappropriated surplus that it is estimated will have accumulated in the parks' share of oil royalties by the end of the 1939-41 biennium.

Already the State park commission has made a beginning on this new program under recent legislation, particularly as to two outstanding Redwood projects. Matched with private gifts raised by the Save-the-Redwoods League, \$148,500 in State funds has recently been authorized for expenditure in acquiring the first units, with options over the next 10 years for the balance, in the Mill Creek Redwoods northeast of Crescent City, and on "The Avenue of the Giants" near Dyerville, Humboldt County. Over 7,000 acres in these two areas are due to be acquired in 1939. The success as to the balance will depend, not only upon future legislatures, but upon ability to secure private gifts to match State funds. Past experience leads to optimism in this regard. The 10-year program for these

two projects, as determined by existing options, calls for expenditure of \$1,000,000, or an average of \$100,000 per year—\$50,000 from contributors and \$50,000 from the State. The Save-the-Redwoods League was able to raise \$52,000 last year and \$54,000 the year before, and over the 21 years of its existence private gifts toward the Redwood parks have totaled nearly \$3,500,000, or an average of \$160,000 per year. Barring untoward contingencies, the law of averages may well indicate reasonable prospect of success.

As to the State-wide program generally, there is similar optimism. Gifts from communities and individuals will, it is believed, be attracted to a well-formulated program. If, as is anticipated, the proportion of State funds devoted to State park acquisition remains fairly constant, there should be available for this purpose in the next 10 years an amount close to half a million dollars per biennium. California's total State budget for 1939-41 exceeded half a billion dollars. Surely one-tenth of 1 percent of its total outlay would not seem too much to expect a State as richly endowed by nature as California to expend in the preservation of parks for the pleasure of its citizens and the inspiration of future generations.

RELATIONSHIP OF MUNICIPAL, COUNTY, AND STATE RECREATIONAL SYSTEMS

by C. B. WHITNALL, *Commissioner, Milwaukee County Park Commission*

I HAVE BEEN ASKED TO WRITE on the relationship of municipal, county, and State recreational systems, and I shall approach my subject in a manner that may jolt the general conception of "recreation." I fully realize that what has been done in the field of recreation has been a development which grew out of the fact that we suddenly found that something had to be done to occupy both young and old during the leisure hours which the machine age had thrust upon them. We found that people who had spent many hours at hard labor had not learned to play—they had always found it necessary to rest physically to meet the next day's demand upon their strength. Our youth was no longer drawn into industry at a tender age, and their leisure hours became provocative. Something had to be done, and the development of public recreation became an absolute necessity to keep both young and old out of mischief—and city, county, State, and Nation vied with each other in this development of body and mind. All this has been and is tremendously important. However, all this is definitely established and while there is still room for further development and the rounding off of the edges of these

recreational undertakings by coordinating and blending the undertakings along this line by our various political bodies—city, county, State, and Federal governments—we must face the recreational problem from a larger and even more effective viewpoint. In other words, "Henceforth, our glasses must sweep the further shore."

We have sinned, almost beyond redemption, in the matter of urban development. Our urbanites live, labor, and play within our urban areas, and while they can find recreation, we must now undertake their re-creation, and I should like to make this article the first bombshell, to open up at least a crevice through which a ray or two of the light, which I can see so clearly ahead, may enter. In all this work we need the coordinated effort of every political unit, and when we cast aside the jealousies and bickerings that exist between these units we will accomplish great things, and I am hopeful this day is not far off.

The State is the sovereign factor. The county is a civil division of the State; and municipalities, cities, or villages have privileges of local self-government within a county.

The cities have for years been vying with each other, each

one jubilant over its rapid growth and development, with no misgivings as to the sorry plight into which their so-called success was leading them, for the most part unconsciously, of course. Nevertheless, we have recently awakened to the realization that all the cities, each one emulating the other, were at variance with the fundamental laws of Nature, thereby creating the necessity, sooner or later, of a vast amount of "Re-creation." This is not only true of the physical structure and arrangement of cities on which an untold amount of human labor and money has been expended, but the most serious effect has been on the generations who were doomed to develop within an environment thus created.

Therefore, our most important responsibility today is to conserve the natural forces inherent in land. Land naturally and actually belongs in the same category as air, water, and the sun's rays. In our strife for the monopoly of our collective inheritance, we have been unable to claim ownership of the sun, water, or air either by force or cunning. However, the monopoly of land carries with it the other three elements. Nature has spent itself in preparing this world for us and we are just beginning to realize that even the least interference with its process brings penalties that are hard to pay.

Cities have grown rapidly, more so in population than in area. They are reputed to have grown enormously in wealth—wealth that may be measured by the tax on the communities' endurance, or the exploitation of a majority by a minority; where the third generation of city-born are more or less degenerate and fresh blood is lured from the country to maintain the necessary manpower; where crowding lowers personal vigor to increase the landlords' receipts; where food enough for ten is shared by twelve, and where the instinct for self-preservation induces cunning.

Too large a portion of our people now live, or exist, in cities chartered by the State. The city's authority is confined within an imaginary line encircling it. There are also villages, usually smaller than cities. Both, nevertheless, are part of the county as the county is part of the State. Physically, if independent, both city and village are almost helpless.

Usually the first accomplishment of cities has been the destruction of their share of the natural landscape. Then later comes a time when their intuitive senses exert an influence to establish in spots, some semblance of the natural landscape and they buy back at a high price what they wantonly destroyed and again put time, effort, and labor in restoring the land and call it their "city park." These parks do supply to a very limited extent the natural influences for which the population unknowingly yearns. But except where a most skillful landscape architect is in control, they receive but a poor substitute in spite of its costing many times more than the natural landscape so ignorantly destroyed. And this destruction, I am so sorry to say, is designated as a civic improvement.

When our cities were built their natural waterworks were

ignored. They spend large amounts for boilers, engines, water mains, and help themselves to some river or lake for their water supply, without appreciation of the fact that the river or lake they are drawing from is dependent upon large and definite areas of the regions beyond for its supply, and without which the whole county or several counties would suffer a drought. It seems a pity that so many thousands of graduates from our schools do not know that the sun is the powerhouse of Nature's water department; that the heat it sends to the earth's surface, particularly the oceans, creates vapors which rise, freed of all impurities affecting animal life, and form our clouds. The sun's generated heat, particularly over tropical areas, causes air to expand and rise to higher elevations causing our "trade winds," which carry the clouds great distances and as they condense, the forest-covered lands absorb the falling rain like a sponge and release the filtered water through small outlets which we call springs, which in turn find their way downhill into creeks and rivers and back again to the ocean.

It must, therefore, be obvious that any political unit, city, village, or town, is a very small factor in the natural landscape of the county or State in which they are located. In fact, the major valley is necessarily the plan unit. Larger streams invariably have lesser streams that drain their smaller valleys into the larger. The dominant valley is usually made up of smaller valleys, all of which are important factors deserving careful consideration to avoid any discordant element with the natural influence for health, appearance, efficiency, and economy. This is fundamental, and each political unit should maintain its harmonious relationship with the whole valley, of which it is an essential part, to maintain the balance.

City planners are just waking up to the fact that the county's domain so completely surrounds a city and that conservation of the natural forces, so vital to all, must be undertaken by the respective counties in which all of its political units should exercise their cooperative interests. This is a tremendous responsibility that has not been realized, in fact, has been entirely overlooked by our county boards in planning for the future. Comparatively few people comprehend our present situation, yet the habits of thought acquired by our condoning the congested city can be more easily overcome now than ever before, largely because of new habits formed through the use of autos with their demand for traffic arteries. The telephone and radio are creating a tremendous power in combating the intensive use of urban areas, and it is our duty now to make the most of the present opportunity.

The automobile has not only loosened the props supporting the inflated values of downtown congestion of our cities, but has given large numbers of unconscious victims a taste and vision of the undefiled areas beyond and has created an incentive to acquire at least a used car and move out into this Elysium that beckons them.

We now have several generations of city-bred people who

hunger for the natural without really understanding what ails them. For, while city dwellers have been educated—at least we call it educated—in various degrees (many of them graduates of universities) they are for the most part completely ignorant of natural, spiritual, and physical contacts. In fact, many thousands in our large cities have been weaned from Mother Earth before their birth.

A process of gradually promoting the natural environmental influences for these people means to re-create their vigor and stimulate a mental appreciation of their place on earth, to restore them to normalcy. It will be the greatest re-creational service. This endeavor is fundamental and of far greater value than to provide lawn tennis, baseball, etc. I do not wish to depreciate any of the athletic sports, which have great value, but I do feel that the environment is of first importance and this I feel is the responsibility of a park department. Environment has a definite effect on sport, a fact which we have especially noted in golf. The golf course which is beautifully landscaped, offering vistas here and there to stimulate the player's sense of beauty has a greater patronage than the one which provides merely a clipped lawn with the necessary hazard, for it adds spiritual uplift to physical satisfaction.

Comparatively few are aware of the mental and physical support derived from a natural landscape environment, which is composed of land, water, atmosphere, and the influence of the sun. In music we have eight notes, yet how wonderfully the different combinations of those eight tones affect us. When you listen to Beethoven or Wagner you are not always able to comprehend the natural feelings and impulses which the composer undertook to convey to you by sound waves. Our natural landscape has but five tones—land, water, atmosphere, the sun's energy, and electric energy, all of which are part of us—in fact, without the influence of these tones of Nature we lose our pep and good nature, and city dwellers so clearly prove that being deprived of the support of this landscape influence has taken something vital from them.

It is important that every State create a State Planning Board, and my reference to such State Planning Boards is made with the assumption that the personnel of such boards should be comparable to Wisconsin's State Planning Board, which is composed of the board members, an executive secretary, a working staff, a landscape engineer, a planner well versed in zoning, traffic, parking, etc., a civil engineer with knowledge of geology, and draftsmen. The State Board membership is composed of the State Director of Conservation, State Health Officer, a member of the State Highway Commission, the Industrial Commission, and the Public Service Commission, also two members of the State university faculty and three members appointed at large. It can readily be seen that such an organization is inclusive enough to prove competent to promote plans for one county after another and check up on procedure, and to function as the coordinating influence where county

boundaries have so little relationship with drainage areas. This is calculated to provide a complete State plan eventually with the cooperation of the counties. This we are doing in Wisconsin. By this manner of procedure a recreation area has already been determined upon, which will be 80 miles long, with a width averaging from 2 to 3 miles, extending into five counties, encompassing the area known as the Kettle Moraine. This area is composed of small lakes, rugged hills, and small meadows, ideal for a summer playground, camping, etc. Although there are innumerable other local features within each county that may be developed separately in harmony with local ideas or fancy, the provision of State parks and forests is a special study for the Conservation Commission, but with the understanding cooperation of that commission and the State Planning Board these parks can be located and developed to greater advantage.

It is extremely important for the State Planning Boards of each State to urge each county to create a competent Park Commission and Rural Planning Board and to provide an annual appropriation for such commission to function. However, to function should not merely mean to look around for pieces of land and in an offhand opinion convert them into isolated parks, which land selection is so often influenced by people who have land for sale. The Park Commission's responsibility concerns the general welfare of the whole county more than any other governmental authority. The mapping of the entire natural water is of first importance. Every stream or lake should be mapped, the size and importance of a stream that flows in from a neighboring county through their own county and into another county should be designated. It is a matter of conservation including, in particular, an appreciation of forestry. The whole county should be zoned for the purpose of determining the most appropriate use for the various features that exist. It will be found that lands that are of least value for other purposes are of greatest importance for parks and parkways, and for maintenance of environmental influences, which offer water, sunlight, and atmosphere, with land contours to our liking; that create views and an appreciation of the vegetation that thrives on hills and along water. These are the lands that charm us and involuntarily make us exclaim, "How beautiful." The impulse for calling a locality beautiful is evidence of its being an appropriate environment within which to work or play.

Every stream should be mapped and reserved for a parkway. It has been customary in rural areas as well as in cities, to use these depressions of contour for the deposit of refuse, with the idea of eventually filling them to a level with the land being drained by the stream. Even where there is a river, the water surface is encroached upon, with the apparent feeling that every square foot of land is of value and the water, or water-soaked land, yields no crop. However, after the first two or three miles of a parkway have been completed, people begin to understand and the appreciation increases. A comfortable looking home facing a park-

way drive becomes an objective for many. Later on if the area becomes populated enough to require sewers, the natural stream having been preserved, obviates the necessity of constructing a storm sewer costing much more than has been expended for the parkway lands.

A complete plan for the whole county should be made and hung in plain view in all municipal offices, where it attracts attention and people soon become familiar with it. This method is particularly effective after the first unit of the parkway has been completed. People trace the contemplated additions on the plan map, as well as the parks existing or projected, that will be connected by the parkways. They may notice that two wooded areas are mapped and upon inquiry learn that those are the lands that are essential for the maintenance of the streams. It may be their first lesson in forestry. When they learn how the forest-covered lands absorb the greater amount of water they readily comprehend that there is the least amount of water run-off from such land, even though elevated.

The park system of a whole county naturally becomes surprisingly inclusive, and it is not advisable to present the complete plan to the county board for adoption at once. To prepare a careful estimate of the entire cost, and the time required for accomplishment would stagger the comprehension of an ordinary county board. You cannot expect the board to approve and adopt such a plan. However, it is tremendously important that the entire plan is on paper, and that every move of accomplishment follows the plan and fits into the pattern.

Start in by determining on which part of your plan your income will reach furthest. You may find an opportunity of acquiring 15 acres of a projected park at a low price, while other pieces needed to complete the project are held at a very high price. Experience has proved the advisability of purchasing the 15 acres, fitting it for temporary public use and deferring further purchasing in that locality. Your plan is so extensive that you will always find someone wanting to sell at a reasonable price where you want land. However, it is very important to complete one unit of parkway, and a good place to start is where land can be had reasonably because the owners are tired of paying taxes on same. After you succeed in acquiring one unit connecting two points of interest, residents become interested and soon someone nearby, owning a large acreage, perceives how much more attractive a home site on a parkway drive is than on an ordinary road or street, and will dedicate a portion of his land for the parkway, because he realizes the superior advantages given to a residential subdivision if given a parkway frontage. The next landowner may want a good price; just pass him up. In 2 years, sometimes 3 years, he will have seen his mistake and will call on you for a reconsideration. At first your movements appear rather erratic and planless, but in 5 years the breaks begin to fill up. Your two or three completed county parks will be more wholesome than an ordinary city park, while their parkway connections with the drive along the watercourse from one to another add

immensely to their charm. This formula of procedure proves its value as you make progress, and private enterprise falls harmoniously into line. No bonded indebtedness need be incurred. You pay as you go. It has been customary in places to make assessments on the property benefited. This has appeared to be equitable but it is a great deal of bother, and when a plan covers the entire county in its care of conservation, particularly of its water resources, and recreational facilities are impartially distributed, it is soon recognized as an undertaking for the benefit of the general public and not a local affair in any way, and the cost can be distributed as a tax over the entire county. Of course, an undertaking of this magnitude requires several years to reach all localities, but when the attempt is made to reach the most urgent first, the added experience affords some improvement to the area reached last. It is by far a more tranquil process than making an attempt to assess individual benefits. It might well be considered an evolutionary process by which each county would be comforting the urbanites that come seeking rest and relief, by locating sizable areas in proximity, but not on traffic arteries, and providing ample virgin facilities, not for a wildlife refuge, but for homes for urbanites suffering with the nervous affliction which might well be called "Americanitis."

We are reaching a stage of civilization where governmental authority recognizes a prevailing hunger for an improved social appreciation of our relation to the natural landscape. A movement to satisfy this hunger is herein advocated. The pushing to completion of a careful segregation of agricultural lands from lands for human culture is imperative, and it will be up to the County Park Commissions, with knowledge and understanding of landscape architecture, to prepare a complete master plan for the subdivision of lands for residential purposes on each side of these parkways, varying in depth so as not to cut into good farms. The subdivision plan should include a system of travelways so harmonious with the surrounding country, that the same will add complacency to the neighbors and travelers, as they lead to these areas of tranquility that we will be able to conserve in obedience to natural law. All efforts must have a definite and reasonable objective. Everyone is benefited by an intelligent, economical, and progressive public policy, and the conservation of natural influences when providing travelways is no exception.

It is my desire to confine myself to travelways within the areas segregated for human culture, fully recognizing the need of adequate separation between through traffic and local traffic. Segregation of agricultural lands from the most appropriate residential areas for desirable homes need not and must not isolate the farm home from the natural landscape.

While people find their way over alluring and fascinating travelways to reservations for homes, the forester will be called upon to convince the farmer that some of the land which he has attempted to cultivate for crops no longer responds. The cause may be erosion, which is gradually

ruining his land, or it may be impoverished by continuous cultivation, without rotation of crops, or there may be other reasons. He should be encouraged to do what may be done to restore the landscape to its original nature and should be induced to select the best spot on his farm for a site for a new home, which should be modern and convenient. It will not be long after the farmer and his family become more intimately acquainted with the urbanites that are settling within the valleys and over the hills, before they, too, will be stimulated to better living conditions, and the farmer will begin to realize that intensive farming is by far more encouraging than extensive farming, particularly when the social influences of the cultural travelways begin to exert an influence over him. His intuitive sense of cooperative companionship is awakened; he becomes conscious of the isolation brought on by many hours of work which have darkened his vision of the potential possibilities that awaited his appreciation, and which he now recognizes.

I am particularly interested in the smaller and shorter travelways that reach objective homes after the traveler leaves the larger arteries—where the travelway becomes more personal than general, yet always remains in touch with the community heart throbs. These travelways should penetrate the landscape as completely as our own nerve system distributes its delicate and sensitive filaments to every part of the body. The charm of these rural travelways lies in the intimate scenes along their way, and the sense of fellowship which everywhere pervades them. Such a landscape has a composed quality, and cottages set securely within it seem to display a deep accord between man and Nature; they have a “lived-in” character. The landscape becomes humanized. It will be the landscape of a higher civilization. It is probably difficult for most of us to picture such a state of tranquility evolving from our present housing shortage existing within the shadow of great wealth which is made most vivid by the severe contrast of the slum areas. The observing planner, however, is stimulated by this vision of the possible. It strengthens his faith in the survival of those finer qualities and sensibilities that are latent in every child, and can be relied upon for the culture of an improved generation. The successful planner will never relinquish his endeavor to conserve natural resources and to exercise control of commodity flow (a feature I am not discussing herewith) and the development of environment. The potential possibilities before us must be carefully checked with our objectives.

Transplanting the adult urbanite from surroundings of economic strife, hurry and confusion of activities, noise, impure atmosphere, together with a constant feeling of uncertainty about everything essential to one's welfare, to an environment of natural influences within a neighborhood of individuals who labor just as hard but under circumstances where they can see the product of their own labor, must arouse the best within them and stimulate their courage and desire to go on. There is a measurable result of their effort. Their situation seems more reasonable than

the task of the urbanite. Their coming together reveals to them that after all their interests are quite similar, and that fact brings them closer together, and they soon work out their problems cooperatively, and they are happy in working together.

The life on the land will work a physical change in the urbanite, while the revelations of the urbanite to the farmer will be working a mental change in him. However, both have become too far calloused by continuous fatigue and habit of thought resulting from fatigue, that immediate consolation could be forthcoming.

The children, however, are the first to exercise those intuitive senses that direct their activities in harmony with Nature. Their attitude is different from their parents'. There is no recreation for a child comparable to an opportunity to exercise all his faculties to a pleasureable degree. Playground leadership and organized sports of all kinds are of value and should be provided. In fact, a park system is largely for the purpose of providing suitable areas with the most desirable environment for all wholesome sports that come under the common meaning or understanding of the word “recreation.” However, that sort of recreation has a tendency to dwarf or curtail individuality, for, being group work, it must of necessity be guided by rules and regulations, teaching the rights of others, which are valuable lessons of life but are no incentive to the creative instincts of those children who are less interested in physical joys and conquest than they are in things that fly, crawl, and creep; who wish to explore and try little experiments of their own. And it is from this type of children that we eventually draw our great statesmen, men of science and constructive ability.

It is my purpose, therefore, to stress the importance of the master plan for the subdivision of land for homes. The prevailing custom of arranging building lots in blocks, like a checkerboard, is so wasteful of time, expense, convenience, and most all natural desires, that it is not well to devote time to enumerate them in detail. Our first class residential streets consist of costly homes placed in rows on each side of a street. The city engineer has contrived to have them on a level. The view from the four sides of each house is into neighbors' homes, across the street, and the rear of the house on the next street. A cement street pavement, cement curbing on each side, a cement sidewalk on each side. A cement walk to the front door and around to the side or rear door, a row of trees between curb and sidewalk, and some grass to be manicured twice a week. It is all unnatural and expensive.

I have referred to the travelway picking its way through the natural contour of the land. You have a fair example in our carefully made park drives. If they are carefully laid, they conform to the course you would naturally walk if there were no driveway prepared. Therefore, the lands to be arranged for residences should be parklike; the lots should be of various dimensions, taking into careful consideration the contour, the site for the house, the garden,

etc. Wherever you place your house there should always be one or two long distance landscape views, and no house should obstruct the most desirable view from another. It will be like living in a park, there will be community playfields, and even the least expensive lots will be sizable; children will always be in touch with Mother Earth in their own home; their ingenuity will be exercised to fulfill its own desires. There will be more wholesome recreation within these individual homes than a community playground can ever yield.

The county is the governmental unit best equipped to give to our people the opportunity to live in a wholesome, happy atmosphere, and it should be the province of the county to prepare parks and parkways and prepare the master plan for the subdivision of the lands under its jurisdiction, of which there are thousands of acres. The time has passed when every owner of a piece of land considered it his inherent right to use or abuse his right of ownership without regard to his fellow citizens and neighbors, as was the case when small groups clustered around the post office and formed the nucleus from which our present cities sprung. It is much easier and much cheaper to establish a new system of living which will be re-creative of body and mind than to tamper with the established city, the early mistakes of which have become vices by development although condoned by familiarity and habit. But we must give those who love the beauties of Nature an opportunity to live where Nature has a chance to exert its influence for the good of mankind as the Supreme Architect intended it should, and the county is the agent through which Nature can become effective and the result will be the effort's greatest reward. Every man or woman is a better citizen for owning a home within their means, where they can toil for themselves, and be better citizens because they are happy and eager to be respected in a permanent community. This is a form of adult re-creation that is given little attention, yet is tremendously significant. This change should be a process of intelligently directed evolution which is within our grasp, and is a process that cannot be successfully accomplished within a city where there is not land enough and values are high. By spreading these residential areas over a goodly portion of the State, land values will not be forced so high.

The rising generations of children will review the iniquities experienced by their forefathers. They will affiliate with those who were in the minority, and help celebrate this minority's coming of age. And it is my firm conviction that the victory of this minority, and its arriving at its majority, will be largely due to these master plannings following the parkways that have made interurban homes possible, and through them developed a finer and better race.

Our supervised playfields and social centers are the path from the Past to the Future, and their importance in stimulating the appreciation for the "Great Out-of-Door," and the desire for social undertakings cannot be overestimated. But they are not all-inclusive—for they do not

and cannot reach those interested in sports or who are physically unable to take part, and, therefore, I strongly advocate a proper environment for our homes, a natural environment which will develop the best within us physically, mentally, and spiritually, for nowhere has one a greater right to happiness than in his home, and no home can be so in a sordid, stuffy, unnatural urban environment.

The State has a definite place in recreation as well as re-creation, for it can ignore petty, imaginary political lines and create forest reserves, wildlife refuges, control hunting and fishing seasons, and create large park areas where camp sites are set aside for those desiring them, and where the Nature lover can prowl about to his heart's content, following trails, or streams; where the pedestrian or the autoist seems to feel attuned to the infinite, and the oneness with Nature makes him a better man for the time being, which in turn leaves a spark behind to be rekindled from time to time. These areas should be left as rugged and natural as possible, just as our national parks are monuments to Nature's own handiwork, rather unsullied by the hand of man except where necessary to make it accessible to all.

Summary

In the foregoing argument I have tried to bring out the following points:

That, while organized recreation has been a forceful power toward good and the uplift in community life, we have reached a time where we must consider recreation from a larger and more effective viewpoint.

That, to redeem the city dweller from the effects of an unwholesome environment that we have permitted to develop, we must undertake his recreation through the coordinated efforts of all political units.

That, the relationships of city, county, and State are at present too distant.

That, the State, by political influence, has legalized and condoned the errors of city development and that the counties are as yet nearest to the natural state within reach. They still possess natural influences that cities have crowded out. They are sizable enough to avoid congestion.

That, decentralization of our cities has already begun by the intuitive sensibility of many who have not yet lost that faculty.

That, with our recent improvement in transportation and communication, the county government should have no difficulty in the arrangement for all business, whether private or public, to function efficiently without impairing in the least the natural environmental influences inherent in the land.

That, the most important feature of the counties' assumption of what may be referred to as urbanizing control, is to insist that each home with children will have a portion of out of doors freedom, where they may exercise their personal ingenuity and preserve their individuality,

thus experiencing the most valuable recreation possible.

That, the mass recreation of playgrounds is social, and valuable for social advancement.

That, our adaptation of the subdivision of lands into home lots to the natural contour along our parkways will without doubt lead to the development of an improved people, both physically and mentally.

That, the State Planning Board should function as consultant for counties and also as the coordinating agent for the adjustments between counties.

That, the State has a definite place in the scheme of recreation, being able to create larger areas of forest land, parks and wildlife refuges, because of its sovereign right to ignore imaginary lines of lesser political units.

STATE PARK RECORDS AND FINANCING

by CHARLES A. DETURK, *Director, State Parks, Lands, and Waters, Indiana*

AN ACCURATE AND COMPLETE set of records are the successful State park administrator's most valuable set of tools for his job. They become his only true yardstick in successfully carrying out his threefold task of planning, administration, and maintenance and operation. They are his true basis for a thorough understanding and appreciation of the duties and responsibilities facing him in his daily or long-term administrations. Indeed, they become almost the only measure by which he may judge his success or failure.

Since there are no hand books, no reference works, no wealth of background to which to turn, such records must be depended upon for a guide and a check in all important decisions touching the three phases of State park work.

Accurate records, honestly kept, form the basis for a knowledge and understanding of park finance. The maze of figures, expenses, income, appropriations, insurance, revolving funds, investments, capital expenditures, become understandable only when properly recorded and tabulated. All these items, so recorded and tabulated that they may be studied and compared, given their proper place in the picture and correctly evaluated compared to the whole, will give an undistorted view of the problem of finance.

Budgets (and they are vital to proper administration) are impossible without a set of records on which to base them. No commission, director, board, or committee can or will approve budgets which are a set of figures thought up out of thin air, or to get all funds possible. The case must be proved. Records are proof, irrevocable truth, of what must be approved if a certain result is desired. Without accurate records, even the preparation of an intelligible budget becomes impossible.

The foregoing does not apply merely to accountants' books, or to State auditors' files. Such records must be prepared by and for use of the State Park Administrative Authority. He knows what knowledge he must have, what data he must collect, what facts are pertinent to his

problems. Records in this sense become a set of data, a related accumulation of facts and figures, an administrative reference bureau.

Complete records (and they are almost valueless unless complete) include much in addition to finances. They must include attendance—accurate, not estimated or more commonly wishfully imagined—use data, traffic volume and flow, water consumption, fuel consumption, facilities use records, peak load knowledge, and a mass of other more or less important facts. Upon these, then, must be based the all important decisions of policy. And it must be stated that upon policy a State Park System stands or falls. Upon accurately taken and properly recorded facts the guiding decisions become valid. The administrator knows what certain results or goals will be achieved.

At present State park "planners" have a wealth of theoretical knowledge. Plans have axes, balance, harmony, and are even beautifully presented on paper. What goes into those plans; why will they work; will they serve their intended use; will they present on the ground all that they represent on the blue print? They will if they are based on concrete facts. Would an engineer plan a dam without knowing the watershed, the rainfall, the porosity of the earth, the degree of slopes on the hills, the drainage area, the run-off factors? Park planners have designed campgrounds, lodges, picnic areas, parking areas, all as costly as the engineer's dam, and as costly to revise, with no conception of population density, expected attendance, percentage of attendance that will use each facility, average or peak load use, where attendance comes from, how many cars to park, length of visitors' stay, or, indeed, without any seeming basis at all. Again, the record! These records may become as infallible as the engineer's handbook, as valuable as his formulae, as effective as his tables and charts. Without them all such planning, theorizing, and beautifully delineated master plans become so much ineffectual, wasteful effort.

The lack of such records will inevitably result in confusion, in ill-planned facilities, and in a general lowering of the standards of administrative planning and operation. All these functions, when based on superficial knowledge and guesswork, result in the well-deserved criticisms leveled by practical people at certain types of State Park Administrators and State Park Systems.

The importance of accuracy cannot be overemphasized. In addition, and often overlooked, are the equally important matters of method of acquiring data and of proper relation of data in the chart or record forms. Unless carefully worked out such records may give false pictures, may, by their very manner of acquisition and presentation, give false emphasis to unimportant factors. They may, by unstudied methods, lead to errors in all phases of park management. This applies particularly to use data which, unless all factors are understood, give no picture at all. Data which show that ten thousand persons were in a State park on a given day, and which fail to show that nine thousand passed through on a State highway without stopping is obviously worthless in planning the parking facilities.

State park records may be roughly classified into three branches:

(1) Financial records which show all the ramifications of income, expense, labor expense, cost of supplies, materials, equipment, and administration. These are seldom kept in a useful manner by State agencies. Area costs, facility costs, building costs, service costs, job costs, all have a bearing on proper operation and administration. Such records show reasons for replacing labor with equipment or for eliminating both in certain operations. The financial record becomes the whole basis for presenting budget requests to proper authorities, or appropriation requests to legislative bodies. The much-maligned legislators are doing a public service by refusing funds for theoretical necessities and visionary developments. The financial record is also the basis for Federal aid to the State park systems, and properly so. A well-kept and presented set of figures weighs heavily in decisions affecting the States' share of Federal assistance in development. It will probably weigh more heavily in the future.

(2) The inventory type record is well understood. Its results, however, are not so obvious. In addition to being a record of physical property, it frequently leads to better systems of purchasing, better facilities for maintenance and storage, better service units, and proper systems of keeping, using, and replacing tools, equipment, and supplies. This record also carries influence in securing funds, in justifying expenditures, in allocating budget accounts for maintenance and repair, and in the organization of an effective field personnel by knowledge of what they are to do and what they have to do it with.

(3) Of major importance is the use record. The term hardly describes the product, but the record is vital. These are the data upon which and for which the park system is

created. Their tabulations range from a single yearly attendance figure for the system to how much water is consumed per person in one group camp in one park. Their details are many and their compilation laborious and somewhat expensive. But the results are the heart of the large policies, the extended development plans, the land use planning and, in fact, the knowledge upon which the National Recreational Plan must be built. Without these data all our plans and theories are shots in the dark. We know how many of those shots have missed in the past simply because our basic knowledge of use and requirements was nonexistent.

So much for the subject. The case is presented as I see it. As sincerely as I feel toward the National Recreation Plan, as well as toward Regional and State plans, I feel that unless they are based on accurate information, accurately and truly interpreted, they stand little chance of legislative approval, little chance of popular support, and a great chance of missing their fine objective.

State Park Financing

The subject of financing the acquisition, development, operation, and maintenance of State parks is probably the most discussed, torn apart, upheld, praised and cursed question that disturbs the equanimity of the entire group interested in the work. Consequently it is one of the most misunderstood and controversial subjects in which all State Park Administrators are vitally interested. Opinions are varied and violent, and yet on the salient points they agree. State Parks must be financed. The public must finance them. From there on—chaos.

In the first place, there is no agreement on terminology. Opinions are expressed on financing "parks." What kind? There it is. The purposes and aims of National parks, State parks, metropolitan parks, county parks, playgrounds, recreational areas, and school grounds very widely. Yet they are lumped together and the question raised: "Fees and charges or tax supported?" Here, State parks are under discussion.

Primarily, State park areas are for the conservation and preservation of public domain in as near its original state as possible. That fact must be kept paramount. Why preserve them? To make them available for human use and enjoyment, education, and recreation. To make them available to the present public, to the present public's children, to their grandchildren, and to their heirs and assigns forever. Vital to protect and preserve these areas? Yes. Vital to provide picnic grounds in them? No. Exactly there is where the misunderstanding occurs.

We feel sincerely that it is logical and possible for State park systems to be self-supporting. Based on their primary function and purpose of being public-owned domain they should be acquired by fair means or foul. Donation is practical, although somewhat out of date. Purchase by public appropriated funds, either from general funds or tax levy is logical and proper. Development by the same

funds from the same sources is equally logical and proper. Public-owned improvements and physical property are then available for public use.

Now the question: "How to operate and maintain such a system?" Here is where the term "self-supporting" becomes important. The State park areas' dominant purpose of conservation and preservation for the public good is accomplished, at public expense, for the good of the people, the State and the Nation. The State park's secondary purpose of furnishing purely individual, or, at the most, group recreation and service commences. Look now at our postal system. Publicly built, every building, publicly installed as a system, unquestionably vital to the very existence of the Nation,—yet, who furnishes stamps? He who has letters to mail. If income does not balance expense, the public furnishes the difference, yet self-support is the attainable goal. So with State parks.

It has never been questioned but that public funds must start the system and meet the deficit, yet, is it too much to ask that a goal of self-support be ever striven for? We think not. The facilities offered in well-planned State park areas are special for special individuals and groups. Their very locations make them so. We cannot feel that the services and facilities are of mass necessity in the same sense as are public health and public education. At least, that is the basis for the operation of the State park system in Indiana.

The fact that a system can be self-supporting, and must depend on its own earned income, has more than monetary benefits. It is a distinct means of developing in the administrator, in the planner, and in the field force a sound sense of sound economic values. It is reflected in the plan of the area, in the design of the park inn, and in the construction of a picnic table. It leads to such small but cumulatively important items as more efficient oven design to burn less fuel; of sounder construction to necessitate less maintenance. Its whole effect is economical and wholesome. Sometimes tax funds come too easily, Federal assistance is too lavish, and the science of economics becomes a lost art.

During the past fiscal year, ending June 30, 1939, the cost of operating the Indiana State park system, including memorials, was \$225,624.85. This includes \$186,914.42 for actual operating and maintenance and \$38,710.43 for administration, including a central design office, publicity, all other expense. The total operating income from fees and charges amounted to \$202,157.55. The system was almost 90 percent self-supporting in its entirety. Our records show that 42 percent of the entire attendance and at least that percentage of the income was from other than Indiana residents. The total attendance for the year was 1,237,686. The average cost of all the State park facilities to each person was 16.3 cents. Is that the basis for the charge of "double taxation" or the statement that the attempt to make a system self-supporting deprives the people who need recreation most of the access to it?

At least it is agreed that State park systems must be

financed and that they may be financed by various methods. A method that is in use, and, we feel, successfully, is a balance of fees and charges and legislative appropriation. During the past fiscal year total available funds for all State park expenditures were \$667,130.52. This total was made up as follows:

		Percent
Legislative appropriation	\$55,230.00	8
Operating income for fiscal year	202,157.55	30
Balance in revolving fund	339,454.08	51
Royalties on sand and gravel	70,288.89	11
Total available	667,130.52	100

Total expenses were made up as follows:

		Percent
Land purchase	\$2,542.23	0.5
Improvements	275,896.55	55
Operation and maintenance	186,914.42	37
Administrative and technical	38,710.43	7.5
Total expense	504,063.63	100

Land purchase and improvements were met out of the revolving fund balance: Operation and maintenance and administration and technical, a total of \$225,624.85, were met by appropriation and earnings—a total of \$257,387.55—with the balance of \$31,762.70 adding to the revolving fund balance of \$61,015.30. These two balances, plus the royalties, provide a total of \$163,066.89 which carries over for next year's use. Knowing the amount and source of funds available, it becomes possible to plan the next year's operations and development.

The foregoing figures show that the earned income is the backbone of the financial set-up. It is interesting to see how it is derived.

		Percent
Entrance fees	\$118,989.91	58
Concession leases	46,857.84	23
Other fees and charges ¹	36,309.80	19
Total	202,157.55	100

¹ Camp fees, group camp fees, cave trips, sale of corn meal, etc.

It is obvious from the above what the important items in this earned income are.

We feel that the above-outlined system of financing State parks is adequate, fair to all concerned, and points the way toward making any system approach the goal of self support. This system has also received severe criticism from many fronts. Various other systems operate successfully, although finance does seem to be a major problem.

There is a feeling prevalent among many people, and among some park people, that seems apologetic when discussing parks; an attitude that perhaps parks are an expensive luxury, but they're nice; why can't some other agency give us money to support them? This attitude is deadly, and it stems from a lack of sound financial policy. State parks should never ride the coattails of any highway department, any fish and game or forestry commissions. As long as parks ask to be treated as recipients of such charity, they will rightly hold a minor role compared with

other agencies. A sound financial structure, be it earnings or taxes, will eliminate this feeling. State parks can, and do, in this system, hold an equal place with any other public operating department.

Two often-stated criticisms of financing a system on fees and charges are:

"It is because of the danger that the imposition of fees and charges will defeat the purpose for which recreation agencies are established that so much care and consideration must be given to this subject.

"No charge should be made for use of publicly owned recreational facilities. The cost of operation should be taken care of by taxation, the same as for education, because recreation is so essential to everyone, including children and adults of all ages; because taxes constitute the least expensive method of operation; and because the fee system tends to eliminate those who have the greatest need for public recreation." (From *Fees and Charges for Public Recreation—A Study of Policies and Practices*, published by U. S. Dept. of Interior.)¹

From the State Park viewpoint, neither is a valid criticism. From the first it must be remembered that recreational services are secondary in State parks. True, the areas themselves furnish inspiration and pleasure to thousands, as well as even active recreation, but this is not their most important function. However, it is their most expensive function, and should be financed by those gaining direct benefit from it.

This leads directly into the second controversial subject. Our records lead us to believe that the fee system deprives no one from any or all of the benefits or facilities offered in State parks. It should be stated again that this entire

¹ The statements in the *Fees and Charges* report (the latter by Tam Deering, director of the Public Recreation Commission of Cincinnati, Ohio) from which the author quotes, have reference to natural recreational areas close to population centers, devoted to intensive use. Mr. DeTurk, it is believed, refers rather to scenic areas which are only one of the various types of areas found in most State park systems.—*Editor's Note.*

matter as presented here relates only to State parks. The very nature of such areas as well as their locations tend to make them somewhat exclusive. Use records show us that exactly 42 percent of State park visitors live outside of Indiana. These records also show us from where all visitors come, what percentages come from 25-mile, 35-mile, 50-mile, and 100-mile radii. We know that park visitors arrive 99 percent by automobile, and that each automobile is driven an average of 122 miles. Each automobile carries 3.5 persons. At an average of 15 miles per gallon of gasoline, with gasoline at 18 cents per gallon, each visitor pays before arriving at a State park 30.4 cents for gasoline and 11.6 cents gasoline tax. They may enjoy all the public areas and facilities at an additional 10 cents per person which is collected as an entrance fee and entitles users to shelter houses, drinking water, ovens, firewood, sanitary toilets, police protection, and all but special facilities such as meals, lodging, camping privileges, etc. Records show also that each State park visitor spends 95.5 cents at the park. The conclusion follows that if each visitor may have all facilities for a day of recreation and enjoyment in a State park for a necessary expenditure of 42 cents (gasoline plus admission), and that each visitor voluntarily spends 53.5 cents additional, the present visitors are not overcharged, double taxed, or unduly burdened to pay their way. It also follows that if 99 percent of visitors come by automobile, and must come that way if at all, and drive 122 miles, which calls for 25 cents for food, plus 42 cents for gasoline, plus 72 cents (2 cents per mile for 3.5 persons) for other automobile expense, each visitor must pay, to arrive, \$1.37.

Add the admission fee, and the minimum average cost for each visitor is \$1.47. Will the admission fee (6.8 percent of the minimum average cost) eliminate anyone who needs such recreational facilities and who can get to them? I believe that the records will prove the case for fees and charges as a satisfactory method of financing State park systems.

CAMPING AND DEMOCRACY

by L. B. SHARP, *Executive Director, Life Camps*

IF THE CAMPING MOVEMENT has much to offer education and democracy, it will have to undergo considerable rethinking and change. There is much confusion concerning aims, objectives and procedure. In the main, camps have patterned their organization after military systems and methods found necessary in handling large numbers of people in cities. Lay-out of camps and types of structures should be so planned that they will assist in securing the greatest educational values. There are, of course, exceptions, but a

far greater contribution to education of youth, and to the extension of our national ideals, can be attained.

We know in this country that young people like the idea of camping, of going places, of doing vigorous, daring, and adventurous things. Our youth are receptive to the camping motive. It would seem that there must be some way to utilize the high educational potentialities of camping as a means of extending our ideals of democracy. The challenge is up to us. We must be concerned, therefore, with the

problem of how we may extend the camping movement so that it will make the substantial contribution of which it is capable.

A careful study of the organization and administrative procedures of most camps will show that there are departments, heads of departments, and instructors for each as in school. In school these departments conduct "classes" but in camps they are called "activities." Basically, however, they are the same. Literally, bag and baggage, balls and bats, songs and recreation techniques, and almost everything else from the city are picked up and taken to the woods where they are stirred around a bit, a few names changed, a day's schedule added, and it is called a camp. Why this scheduled procedure is followed no one seems to know. We find the traditional straight lines of tents or cabins; the proverbial reveille in the morning; setting-up exercises for no good reason; the morning dip (optional or otherwise); and scheduled activities throughout the day, moving people about by whistle, bugle, or bell. There are, of course, some desirable variations from this pattern.

An example will serve to illustrate the wrong placement of objectives. A visitor was shown a camp located in a beautiful mountain section of our country. The director pointed out the various barn red buildings. First exhibit was the "mess hall" and the parent-demanded cabins all in straight rows. The prize exhibit was, however, the *gymnasium*. A *gymnasium* in the mountains—what a story. Discussion revealed that quite a complete program of physical education, including basketball, was carried out in the gymnasium. The whole mountainside was at the camp's front door—enough challenge for any group of big muscles.

Camps are about the only places left where youth can live, explore, and do things on their own without the arm of the law or the compulsion and restriction of the home, teacher, or somebody else forever pulling them into line. Let us, then, so construct and conduct our camps that the greatest amount of wholesome and democratic living will accrue to each individual.

Life Camps

A brief explanation of the Life Camps decentralized procedure is presented as a constructive suggestion in camp organization. This procedure is a result of careful experimentation covering a period of 12 years. In place of the usual "activity" program there has been instituted the "campivity" procedure. Careful evaluation of the plan, step by step, and restatement of goals in the light of results attained has given new meaning and interpretation to *CAMPING* and has taken it farther away from city and school types of programs and methods.

There are three Life Camps: Camp Raritan for boys, ages 8–16, at Pottersville, N. J.; Camp Pole Bridge near Matamoras, Pa., for boys, ages 13–16; and a camp for girls, ages 8–16, at Lake Mashipacong, Sussex, N. J. Our campers are divided into small, independent camps, six or

eight campers and two trained adult counselors to each group or small camp. At Camp Raritan there are 11 of these small camps, at Pole Bridge, 6, and at the girls' camp, 10. Each camp is located in some attractive, interesting spot and out of sight of the others. They are scattered far and wide over the camp ground; none of the campers lives in the central area or administrating center of the camp. There is no set plan of permanent structures in which the campers live. Their shelters are of various types and all may be moved, changed, altered, or rebuilt according to the plans of each group. In many instances they build their own shelter, living temporarily in a tent while they do the construction work. A few types of shelter are tree houses, tepees, covered sleds, long houses made out of small saplings placed in the ground and firmly braced, long houses built on small logs so that the structures can be easily moved around, individual shelters for each camper, lean-tos, round-tos, and, of course, our traditional covered wagon. This last group has a team of horses and a riding horse, and all provisions are carried in the wagon. They travel about the country from 5 to 65 miles away from camp, or between the three camps, using mostly back roads. Their home is on wheels and they are at home wherever they are. All of these small camp groups plan their own meals, plan their own programs, and in general run their own show. Naturally, there are times when some of the groups do things together, or they all come together on certain occasions.

In this approach the real aim of camping is to teach the youngsters to love the woods. Naturally, they cannot learn to love the woods unless they live in the woods, so there is where they spend the most of their time. The aim of camping, from the standpoint of individual development, is to secure the greatest amount of the most wholesome total personality growth in a favorable camping environment. Obviously, this includes social adjustments, character growth, and those cultural attributes upon which most would agree. Further, this program is based upon five fundamentals of life—shelter, food, self-occupation, spiritual uplift, and group relationships:

Shelter.—From the beginning of man the need for shelter has played an important part in living. The concept of shelter is deeply rooted in human nature. Youngsters have a natural and keen interest in wanting to put and keep a roof over their heads, a place for themselves, a place to put things—a place to live. Present-day living conditions in large cities do not give the child a chance for this natural educational outlet. Hence it is fundamental in a camp program. It would be, therefore, unsound educationally to provide ready-made structures for the campers.

Food.—Food is, of course, basic to life. Full advantage is taken of this fine educational opportunity of teaching campers how to select, care for, and cook their own food. Under careful guidance of a dietitian, children have the chief responsibility of planning their own meals, cooking their own food, and all the problems and difficulties related to food. They enjoy it and can do it adequately. Most of

Learning to do practical things "on your own" in camp.
(*Life Camps Photo by Hansel Mieth.*)



A home-made raft provides good sport under the watchful eyes of camp counsellors.
(*Life Camps Photo.*)

Getting acquainted with the team which pulls Life Camps' famous Covered Wagon.
(*Life Magazine Photo.*)





A group of bicyclists (above) stop to rest in White Pines Forest State Park, Illinois. At right, cycling in Yosemite National Park, California, with impressive Half Dome as a backdrop.



Youthful cyclists gather at a shelter and recreation building in Cook County Forest Preserve District, Illinois. (*National Park Service Photo.*)



these small camps will cook at least two meals a day. They can, of course, arrange to eat meals in the dining hall whenever they wish. In this case, they notify the dietitian when they will come in for a meal; the dietitian does not tell them what to do. In each camp they design and build their own ovens and cooking places. Muffins, cookies, pies, cakes, roast meats, and other delicacies are produced in generous quantities in these outdoor facilities. Many samples of jellies and jams are taken home. Imagine the surprise on Mother's face at the sight of Fred's jam made in the woods. One boy reports that he taught his mother how to make a blueberry pie. A purposeful and vital problem for discussion around the campfire in the small camps is what the menus shall be for the next three or four days and how to cook the selected items. Cook books and menu guides are much in use. Here the dietitian actually becomes a consultant and guide.

Self-occupation.—Each of the small camps is responsible for working out its own program. How to occupy one's time is an important problem to solve. If a camper is placed in a favorable camp environment, and if the counselors themselves love to live in the woods and are skilled in their art, it is not difficult for a group to figure out how they would like to spend their time. These youngsters spend a great deal of time exploring, traveling about, experimenting, building things they need, digging, hunting for interesting things, camping overnight or for two or three days, visiting farms, and in general looking after their own welfare, comfort and happiness.

Spiritual uplift.—Regardless of a person's religious teachings or convictions, what church he goes to, or if he does not go at all, back of and underneath this thing we call *life* there must be some relationship of man to nature. It is a mysterious and illusive thing, yet it is something that can be felt. After a certain amount of the right kind of experiences in this way of camping and living, this deeper meaning and significance of nature seems to penetrate the camper's mind. It has a definite influence upon his thinking and upon his spiritual life.

Group relationships.—These are evidenced in the intensive inter-relationships of individual campers in each small camp group, among the various small camps, and when all groups come together. A small camp group made up of six to eight campers and two counselors is much like a family group. In this situation little things mean much and are noticed by all members of the group. Things that help and things that hurt come to the surface more sharply and quickly. Personality clashes and agreements come more intensively and firmly. There are many occasions for adjustments and companionships. They are all intensified and make for a better social adjustment and cooperation.

There is much visiting back and forth among the campers and counselors. There is an increasing amount of this neighborliness. The counselors share their personalities and skills with campers and other groups. There seems to be

about the right number of occasions for all groups to come together where they get this larger group feeling and camp spirit. These small groups spend a considerable amount of their time visiting neighbors in the community, visiting farms, and, in general, take an interest in the countryside adjacent to camp.

Camptivities.—There are no departments of crafts, music, dramatics, dancing, athletics, and all of the usual list. Our program is built upon the *camptivity procedure* in contrast to the common "activity" plan. A camptivity implies the knowledge and use of many skills, and further, it implies the using of these skills to accomplish some larger end. A skill is not thought of as an end in itself, but merely as a means to an end. The motive for learning a skill arises chiefly from the need. In a situation where everything depends so much upon the individual for his own comfort welfare, and happiness, he is quick to recognize needs and therefore no other motive for skills seems necessary. It is a natural educational process.

Early American Life

A study of the struggles and living conditions of our early settlers gives us a basis for our camping program. They lived a life of daring and adventure. They were on their own as individuals and families. Out of their pattern of living was created our concept and form of democracy. A careful study of their progress will show that shelter, food, self-occupation, spiritual influence, group living and community effort were basic elements in the development of our country. At the time of the signing of our American Constitution, over 90 percent of the people lived in a strictly rural area. Today nearly 55 percent of our people live in large cities and are necessarily subjected to much regimentation, coercion, and regulation along with all their modern conveniences. It is not contended here that we should abandon our social and economic progress and go back to the days of the Pilgrims and early settlers. Not at all. It is maintained, however, that these principles to which reference has been made are as fundamental and necessary in our present-day living as they ever were. Also, there is a better opportunity to experience them in a favorable camp situation.

Public School Camps

In Life Camps this year there was started a significant experiment in cooperation with the New York City public schools through the Mrs. Johanna M. Lindlof Camp Fund. The chief purpose of this program is to determine wherein and to what extent the experiences in camp are educationally sound, worthwhile, and can rightfully be included as an integral part of the public school program. One hundred and ten children were selected from seven different schools and they stayed at camp for a month each. The program and procedure has been carefully set up and outcome will be observed for several years before any very conclusive results can be determined.

City children seldom come in direct contact with nature, the fields, streams, mountains, animals, and flowers. Also, they have little experience in living on their own, getting shelter, obtaining food and cooking their own meals, as well as determining their own occupations, providing for their own comfort and welfare, meeting adversities of weather, and exploring and adventuring in nature on their own. Their range of country experience is extremely limited and consequently they often do not comprehend what they study in their school books. It would seem, therefore, that a program of living in an isolated environment, away from the humdrum of the city and its adult-made laws and regimentation, for a part of a child's life, is a sensible and necessary provision in our newer education of tomorrow.

Ways can be found for school children and camp-trained teachers to learn and teach in camps, with valuable educational results. A month in camp (counting waking hours only) is equal to 40 percent of the time that a child spends in the city schools in an entire 10-month school year—a sizable opportunity for learning.

This pioneering venture is a new kind of education, making it possible for boys and girls to have, as a part of the regular school curriculum, opportunities to solve on their own the questions posed by life outdoors.

How To Decentralize

The movement to decentralize and reorganize camps is beginning to take hold. Many organizations and camp directors find themselves with buildings and equipment unsuited to the philosophy of the decentralization and camp-tivity procedure. It often, therefore, results in an attitude of opposition to safeguard what they have already built. It is not necessary or advisable to change the whole procedure at once. The following steps are suggested:

1. Make a careful study and restatement of aims, objectives, and the meaning of camping.

2. Examine carefully the program of the camp and wherever possible remove the so-called "activities" that are not related to *camping*.

3. Increase the amount of exploratory, adventurous discovery and constructive types of experiences and give less emphasis to others.

4. Secure a staff that is interested in this type of program and give it sufficient training.

5. Conduct a 6- or 8-day conference in camp before the opening of the season with all staff members present. The staff should participate in the discussion of aims and objectives and procedures of the program.

6. The first year start with at least two groups. Let them find their locations in interesting places isolated from the camp. They should be well-equipped, well-staffed, and given much instruction and freedom. The amount of cooking they do should be in proportion to the skill acquired—one meal a day is sufficient as a beginning. They need not conform to all of the usual rules, regulations, and schedules of the main camp.

7. Add groups during the season if advisable and as rapidly as they can be absorbed into the new plan.

8. Campers should have a part in designing and building their shelters. Some cabins or present structures needing repair can be carefully torn down and used for construction purposes. Many different kinds of shelter should be used.

The original cost of construction and the cost of maintenance and upkeep of the decentralized camp is less than in a centralized plan. An excellent example of this is at Dallas, Tex. The Big Brothers organization of Dallas adopted the decentralized camp-tivity procedure plan in setting up its new camp. They have only the essential administrative buildings in the central area. The campers live out in small camps in structures designed and built by the boys and counselors. The results of their first year's operation were most satisfactory.

No one should despair at the size of the task of changing organization and procedure. If it is right and educationally sound to shift to the philosophy of the decentralized camp-tivity procedure, nothing should stand in the way. Once the start is made the change will come very rapidly within the camp, and the results will be gratifying. There is no standard pattern to follow in the decentralized plan. There must not be a pattern. Each location is different. The camp-tivity procedure is geared definitely into our concept and ideals of democracy.

Design and Construction

Breaking up the camps into smaller groups in this way effects the design and layout of camp buildings. The centralized set-up with large cabins in a row or in small clusters does not fit the need. Buildings do not need to be so large or expensive or so numerous. The structures for living accommodations of campers, taking geographic areas into account, should be simple, moveable, alterable, and economical. Campers should have some part in designing and building them or keeping them in repair. These structures and facilities should not be permanent. A permanent shelter somewhat defeats the underlying values of the camp-tivity procedure. This plan should be popular with park departments and organizations which plan to build new camps because the construction and maintenance costs are much less. Close cooperation between the architects and designers and camp directors will be necessary to build the kind of camps that will produce the greatest amount of educational results. The National Park Service has already recognized the need for this move to decentralize the camps. In some of their plans they have reduced the size of cabins and spread them over a wider area.

Leadership Training

Many people contend that it is not possible to permit campers to utilize the woods in the way that this decentralized plan suggests. Experience, however, shows that to the extent that campers have responsibility for the use and care of the woods and are taught reforestation and

conservation, they will be protectors of our forests and use them in the right way. It is largely a matter of education.

Life Camps will establish a National Camp of advanced leadership training for directors and executives beginning July 1940. Courses for counselors will be added later. The new National Camp will be located on the 1,000-acre property in Sussex County, New Jersey. This new camp course covering a 6-weeks period will include practice and theory in the various aspects of camp leadership, nature, construction, maintenance, food, heavy craft work, organization and administration, waterfront projects, and various cultural aspects of camping. Special emphasis will be given

to public school camps. Camping and educational experts will be included on the faculty. Six points of graduate credit will be given to those who register through New York University.

The camping movement in the United States is a potential power for education. Our national, State, and county governments are rightfully and rapidly setting aside more land for public use. Large sums of money are being spent to provide increased facilities for camping and public recreation. A challenging opportunity is placed before the leaders in camping and education to use these facilities to further our own national ideals.

BICYCLING IN OUR NATIONAL, STATE, AND MUNICIPAL PARKS

By ROLAND C. GEIST, *Founder and Secretary, College Cycle Club of New York*

The Renaissance of Cycling

THE YEAR 1936 marks the rebirth of bicycling. In 1899, 1,182,691 bicycles were manufactured and in 1937, 1,130,736 were produced. These are the census statistics of last year. It has been stated that 1939 will far exceed the all-time high of 1899.

Like the English, we have become bicycle minded. The vogue was probably started by some Los Angeles motion-picture stars. It was quickly taken up by the youngsters. Cigarette manufacturers spread cycling ideas by their attractive advertisements featuring the bicycle, a girl, and their product. Seventy-six newly established youth hostels, primarily used by cyclists, also aided the movement. Here the rider could obtain accommodations for 25 cents a night and could tour the country for about a dollar a day under his own power.

Bicycling should appeal to everyone. Among its distinct advantages are:

1. It is a healthful and pleasant exercise as a sport by itself or an adjunct to another sport or recreation.
2. It costs little to purchase a wheel and maintain it.
3. A bicycle is far cleaner than a horse or motor.
4. It may be enjoyed alone or in company.
5. A bicycle may easily be carried by train, boat, or automobile.
6. It is easy to learn to ride a wheel and control it at all times.
7. The bicycle is a sporty machine; cycle races thrill both spectator and contestant and make for tolerance and fair play.

8. The bicycle is a simple machine to take apart and reassemble.

9. The bicycle travels at slower speeds, but gives more opportunity for sightseeing, especially for bird and animal study.

10. The bicycle may be used for hacking, carrying small loads, or for mail, police, and military purposes.

Requirements for the Establishment and Maintenance of Cycle Paths and Areas

The bicycle in itself is not a dangerous machine. The newspaper reports of accidents involving cyclists may be for the most part traced to the condition that the cyclist has inadequate riding space. The horseman, the hiker, the golfer is not required to enjoy his sport alongside and between thousands of speeding automobiles. Before cycling can attain its position as a leading sport, the cyclist must have an adequate place to ride. The cycle paths of 1890 made pedaling delightful. Many of these cycle paths were paid for by the bicycle riders; they were then taken over by the autoist, who is now reluctant to give them back to the cyclist. Until some adequate provision is made for the cyclist on our highways and city streets, both the child and adult rider are threatened with serious injury. One or more cyclists may also slow up motor traffic on a narrow, two-lane road.

The parks of America offer a solution to the problem. A start has already been made in Yosemite National Park and in New York City. Due to lack of funds, these projects are

only slowly taking shape. It is sincerely hoped that the authorities will allot adequate funds to give the people an opportunity to enjoy this most inexpensive of sports. (Compare the rental of a bicycle at 25 cents an hour to that of a horse at \$1.50 an hour.) Almost every national, State, and municipal park has its miles of splendid bridle paths; why not a cycle path also? Thus, the person of moderate circumstances could also enjoy the parks.

With the Olympic games likely to be held this year, and the United States preparing to send a cycling team abroad, public bicycle tracks should be available for our athletes. England, France, Germany, Italy, etc., have provided tracks for their amateur cyclists. The United States has seldom, if ever, won an Olympic cycling laurel. It would not cost a fortune to build a banked track of wood or concrete in a public park in each of our 10 largest cities. The track could be used for other field events. A 4- or 5-lap to the mile track would be adequate. However, as amateur cycle racing is practically confined to a limited number of young men between 16 and 22 years of age, the question of erecting a track is not as pressing as that of the cycle path for the thousands of riders of all ages and both sexes.

There can be no doubt that the construction of cycle paths is imperative. These paths should be surfaced with permanent materials so as to require as little maintenance as possible. Concrete or other hard surfaced material is most desirable. A hard packed dirt road is pleasant for cycling when new, but soon wears down with the resultant puddles, soft spots, and dust. Gravel is the least desirable as it is bumpy riding and wears out the tires, and the sharp edges of the gravel may cause punctures. Both the gravel and dirt road require constant scraping and surfacing. Slate slabs wear well, but tend to shift and thus cause bumps that make for unpleasant riding. Grass may be made smooth for cycling, but it would soon wear out under the constant pressure of wheels. The path should be wide enough to permit two lanes in each direction, as it is customary for cyclists to ride two abreast. This was the plan of the cycle paths of 1890-1900. The route should be laid out through interesting country, alongside of streams, lakes, dams, ocean drives, grades over hills and dales, through forest or meadowland. The path should not be monotonous. Any distance from 3 miles to 50 miles is adequate, the longer the distance, the better. If possible, crossings should be bridged (similar to bridle paths) or traffic lights installed in municipal parks. In the national parks, traffic "stop" signs would be sufficient at crossings. Two logs with a handrail would suffice for crossings over small streams. The cycle paths should start near an important intersection, such as a park entrance, and lead to a definite point such as a resort, scenic spot, spring, lake, bathing beach, rest house, and return by a different route where practical. The path must be safe, thus avoiding sharp turns, blind curves, steep grades, railroad and congested auto and pedestrian crossings, any road obstructions or holes, dips, etc. The ideal cycle path is interesting, with a different view at every turn.

For path racing a flat, straight course is best. Shade trees add to the attractiveness of the course.

Where funds are not available for the building of a separate cycle path, the less congested automobile roads may be utilized. One plan is to mark off a lane at the extreme right and/or left of a wide highway for the exclusive use of cyclists. A white line and notices every mile or so would warn the motorists that this is set apart for pedaling only. This plan would cost very little and give protection to the cyclist. The cyclist would, of course, be required to stay within the allotted space. Another plan would be to let cyclists use a street or highway not much used by motor traffic, for example, an old narrow highway superseded by a modern express highway. This should be for the exclusive use of cyclists. It is not a good plan to shut off a highway or streets and permit cyclists, hikers, roller skaters, scooter operators, etc., all to mingle and try to enjoy the area together.

In many of the parks and parkways, beautiful pedestrian paths have been provided, but there are no or very few pedestrians using the paths. A plan might be worked out to convert these splendid paths to cycle paths. The path might be used by cyclists up to noon, by pedestrians in the afternoon, or *vice versa*.

Along the New Jersey coast many of the shore resorts permit cycling on the boardwalk up to 10 a. m. or until noon. This plan has evidently worked well, for it has been used for several years. The old canal tow paths in New Jersey and New York made excellent cycle paths.

A well-constructed, hard-surfaced cycle path should require but little maintenance. The lightweight bicycle running at slow speeds will cause slight damage to roads, if any. Gravel or dirt paths should be scraped and graded from time to time. Dusty paths should be oiled for pleasurable cycling. Weeds, grass, and underbrush will tend to grow in toward the path and must be pulled out each season. If the path is used for a ski run in the winter, cracks in the surface caused by ice and snow must be repaired.

A cycle path should be equipped with a rest house at the end, middle, or beginning of the path. This will provide a place to rent or check a wheel, to hire instructors, to obtain repairs, to purchase sundries such as a horn or light, and to purchase food and drink, from a chocolate bar to a boxed lunch. The house should be attractive, with clean rest rooms for men and women riders. Racks should be provided for resting wheels to avoid wheels lying on the ground, causing accidents. Shade trees will provide cool resting places. If possible, there might be a room for cycle clubs to hold meetings, show motion pictures, etc. This would be arranged on a rental basis. Most of the cycle clubs in New York City have no regular clubrooms but must meet in a restaurant, fraternal lodge, theater, etc. A clean, large private room on the ground floor would provide adequate facilities for clubs. A flagpole flying the club emblem would greatly add to the prestige of the club. In Philadelphia, the famous Strawberry Mansion

was a popular rendezvous for cyclists for many years. A cycle dealer's store may be, and often is, used as a cycle clubroom, but the club is somewhat under an obligation to purchase its wheels and equipment there, which is not a sound policy. The rest house would, of course, provide an excellent ski and/or skating clubroom over the winter, when cycling is impossible.

Possibilities for the Establishment of Cycling in Our National Parks

At the time of writing, only Yosemite National Park in California has established cycling. No cycle paths, as such, have been constructed. However, a bicycle concession has been established at Camp Curry where about 100 bicycles are available. Tandems are also for hire by the hour, half day or day, or longer. The bicycles are lightweight models and ride very well. There are no organized tours during the "rush" season, when every wheel is being used. The cyclists must use the main auto highways on the valley floor and many a "narrow escape" has been noted. When business is slack in early spring and late fall, half-day tours are organized and well patronized. Weekly tickets may be purchased at reduced rates. The ranger in charge was interested in establishing cycle paths and in organized tours to points of interest on the valley floor. Close-ups of birds and animals could be obtained from the silent bicycle. The bicycles are more popular than the expensive saddle trips. There is no doubt that if the cycle trips were planned and advertised, at least 500 would turn out each morning instead of only a hundred.

Yellowstone National Park would also afford some excellent cycling territory. The circular highway, with its many points of interest every 15 or 20 miles, would make ideal one-day hops awheel. The steep places could be walked, but most of the road is well graded and would present few difficulties to the cyclist. A week's tour might start at Lake, and continue each day to Canyon, Tower Falls, Mammoth Hot Springs, Madison, Old Faithful, Thumb to Lake, a distance of 145 miles. A ranger might accompany the party, similar to the 7-day hiking tour in Yosemite through the High Sierras.

The Yellowstone cycle tour might be extended down to Grand Teton National Park in Wyoming. Cabins or sleeping bags might be utilized *en route*.

Grand Canyon National Park also offers scenic level cycling along both North and South Rims. Tours awheel along the South Rim might go to Hermit Rest from Grand Canyon station and in the easterly direction to Desert View, 26 miles from the center of activities. North Rim tours could take the riders from Grand Canyon Lodge to Cape Royal and Point Imperial, a distance of 24 miles each way. This highway is also fairly level and hard surfaced.

Sky Line Drive, along the ridge of Shenandoah National Park in Virginia, offers about 35 miles of scenic beauty on new hard-surfaced wide, roadway. The approach

from the Sperryville side might have to be walked in part, but the balance might be negotiated with a geared bicycle.

At Crater Lake National Park in Oregon a rim ride of about 40 miles would present excellent views of this scenic gem. Many more points of interest could be examined. The party would really meet awheel and enjoy many new experiences.

Waterton-Glacier International Peace Park would offer an international cycling tour. The Logan Pass road could probably not be ridden on a bicycle, but a tour could be worked out from Glacier Park station: first day to St. Mary Chalet, 32 miles; second day to Going-to-the-Sun Chalet, 10 miles; third day to St. Mary Chalet, 10 miles; then a long hop to Waterton Lakes Park, about 40 miles. Total week's cycle tour would cover about 170 miles, all hard surfaced roadways, with little traffic.

At Acadia National Park in Maine, ideal one-day cycle trips have already been privately conducted to such places as Shore Drive, Southeast Harbor, Northeast Harbor, Seal Harbor, Schoodic Peninsula, etc. The roads are all hard surfaced and wide, the hills are short, but the fogs are dense and sometimes cold and unpleasant.

The National Park Service of the Department of the Interior has developed a wonderful set of parks "for the use and enjoyment of the people." With the establishment of cycle paths in many of these parks, the public may more fully explore them efficiently and economically.

Cycling in Some of Our State and Municipal Parks

As far as known, none of the State parks in the United States have established cycle paths or fostered bicycling to any extent. The Palisades Interstate Park Commission has made a survey of its territory with the aim to establish cycle paths. No definite plans have been made known. There are, however, some wide roadways suitable for cycling and other roads not used extensively or on main trunk lines that might be made available. Most of the road known as the "Seven Lakes Drive" is wide enough to permit exclusive lanes to be marked off along the highway.

The Long Island State Park Commission has refused cyclists the use of any of its parkways, even though they are from four to six lanes in width. It is a fact that these parkways are very congested with week-end traffic and the decision of the commission is sound. However, alongside of each parkway is a pedestrian path that is seldom used even on Sundays. The Commission might well investigate this situation and declare these side paths, cycle paths.

Washington, Chicago, and some other cities have set aside some areas for cycling. New York City, under its able park commissioner, Robert Moses, has drawn a well-balanced system of cycle paths comprising 58.75 miles. This plan was submitted to Mayor LaGuardia on August 8, 1938. It includes four bicycle tracks for racing competition. The old narrow motor parkway has already been converted into a splendid cycle path for some 3 miles at

Alley Pond Park. It is wide enough for four-lane cycling, hard-surfaced, with trees, some elevations and bridged over highways. At both ends are rest houses where wheels may be rented. The path is well patronized by individuals and club wheelmen. It is proposed to carry out the plan with relief labor under the Works Progress Administration. This is a start; other communities might follow the example of New York City.

Transporting the Cyclist to the National and State Parks

No equestrian would think of riding from New York to Yellowstone Park to enjoy a trail trip over the Eaton trail. In the same light the bicycle should not be considered as transportation. For long distances there is more efficient transportation by motor, railroad, or plane. A cycle tour should be pleasurable, not a hardship.

Because of the inadequate facilities for cycling in our big cities, cycle trains and boats are being used. By this means the cyclist is brought out to the country where he may enjoy his pedaling. Out of Boston, cycle trains operate to the White Mountains. The New Haven Line runs trains to New England points such as Canaan, Kent, and

Saybrook. Cycle boats have been operated to Newburgh, West Point, and Poughkeepsie, and to New Bedford and Providence. The Chicago and Northwestern Railway has run trains out of Chicago to Deer Park Grove and Twin Lakes. The bus lines have also been requested to operate trips to nearby parks on Sundays and holidays, carrying the wheels in a freight truck.

The only difficulty with these public carriers is that the rates are rather high (The New Haven charges \$2.25 for the excursion, \$1.50 for bicycle rental, and meals cost about \$1, a total of \$4.75 for a 26-mile cycle trip in the Berkshires) and the homecoming is rather late (one must ride home in the dark from the railway station, if you ride your own wheel). Many cyclists, who also have autos, take their wheels apart or place them in a carrier atop the car and transport them to State parks to enjoy a day's cycling. Thus, one is forced to ride 250 miles by either train or auto in order to enjoy a 25-mile ride in the State park. Cycle paths in every municipal park alongside the bridle paths would solve the problem of "Where shall I ride?"

The United States has provided facilities for every sport from archery to swimming. It is now time to take the bicyclist off the dangerous highways and streets.

THE VALUE OF RECREATIONAL AREA PLANNING

By S. HERBERT HARE and HARLAND BARTHOLOMEW, *Landscape Architects and City Planners*

THE TERM "planning" has been used so widely and so loosely in the past few years that it appears to have several different connotations. We hear of the *planning* of a city, a county, or a State, economic *planning*, national *planning*, *planning* of a park, etc. Any attempt to define the word "planning" is certain to invite differences of opinion, and so, for purposes of this article, it seems necessary to explain what is implied by the use of the term "recreational area planning" in the title.

In dealing with city, county, or State park and recreational areas, the term "planning" perhaps implies three separate and distinct considerations. The first has to do with *coordination* with other activities. The second has to do with the matter of selecting sites, which might be termed "location." The third relates to the matter of *design*.

Before there can be any well-planned system of recreational areas in any governmental unit, it is important to know something about the present distribution of population, as well as probable future distribution, in order that such areas will be accessible to a substantial portion of the population without great inconvenience. Likewise, and particularly in county or State projects, it is important to

know something about broader problems of land use, soil erosion, and the conservation of water resources. Without such knowledge, an area might be selected for recreational purposes that could be used to better advantage for a State or county forest, or for a water power or flood-control lake. A recreational area selected without regard to these considerations will be a bad investment, and possibly even a costly mistake. This is the first planning consideration.

Any well-planned system of recreational areas will include several different types of units, such as those selected primarily because of outstanding scenic value; others because of their historical or scientific interest; others because of superior advantages for recreation. Since there may be an abundance of one type of area and a dearth of other types, and since, in any event, the matter of funds to acquire these lands is always a problem, the selection of types of areas and their location is a dominant planning problem. The best park system will be one in which there is the nicest balance of types of facilities which will give maximum service at reasonable cost. This involves a high degree of skill in planning.

The third planning consideration is the matter of general

design of any recreational area. The term "general design" is here used to distinguish it from detail design. By *general* design is meant the selection of a site, the determination of boundaries, and the broader aspects of development of the area, which will insure its suitability for the purpose intended without waste or extravagant costs. If a recreational area is not thus well suited to the function it is intended to serve, it will be a bad investment and perhaps a costly mistake.

Therefore, this process known as *planning* is the method of securing order, efficiency, economy and beauty in any system of recreational areas. In addition to these broader planning aspects, there are many related phases of more detailed planning or design which should have careful advance consideration. From the selection of the site, through the determination of boundaries, and the location of roads, paths, and trails, to the establishment of recreational facilities and the erection of incidental structures serving the area, there is a continuous opportunity and necessity for the exercise of trained judgment.

For the purpose of this discussion, a recreational area is defined as a space set aside for some form of public outdoor recreation. This recreation may be purely passive, such as the mere enjoyment of natural scenery, or it may include the various degrees of activity to the most intensive physical exercise, such as tennis. All forms are necessary to serve completely varying public demands.

Selection of Site

The selection of the site involves two phases of planning mentioned above, those of *coordination* and *location*. Few, if any, recreational areas are independent of other areas. Each is normally a part of a complete or comprehensive system, and as such should be located in relation to the other units of the system, both functionally and geographically. In a city, the squares, playgrounds, play fields, neighborhood parks and larger parks are all interdependent in providing complete recreational facilities, and in addition should be an integral part of a complete city plan, including basic considerations of land use and population distribution, as well as specific problems of traffic, transit, public buildings, schools, and zoning.

In a State, the complete system of recreational areas would normally include, in addition to the major State park and recreational units, certain areas of special scenic, scientific, and historic significance, and also certain wildlife preserves. Such areas are interdependent with each other and often with city, metropolitan, or county parks, and their selection should be coordinated with other phases of planning, such as population distribution, land use, forestation, soil conservation, flood control, and wildlife preservation.

Therefore, the selection of a recreational site is a problem closely related to the broader phases of planning in the city, the county, the State, or even the Nation. When these broader planning considerations have been coordinated, we come to a study of the characteristics of each

particular site, the function it is to perform in the complete park system, and its relation to other sites.

Boundaries

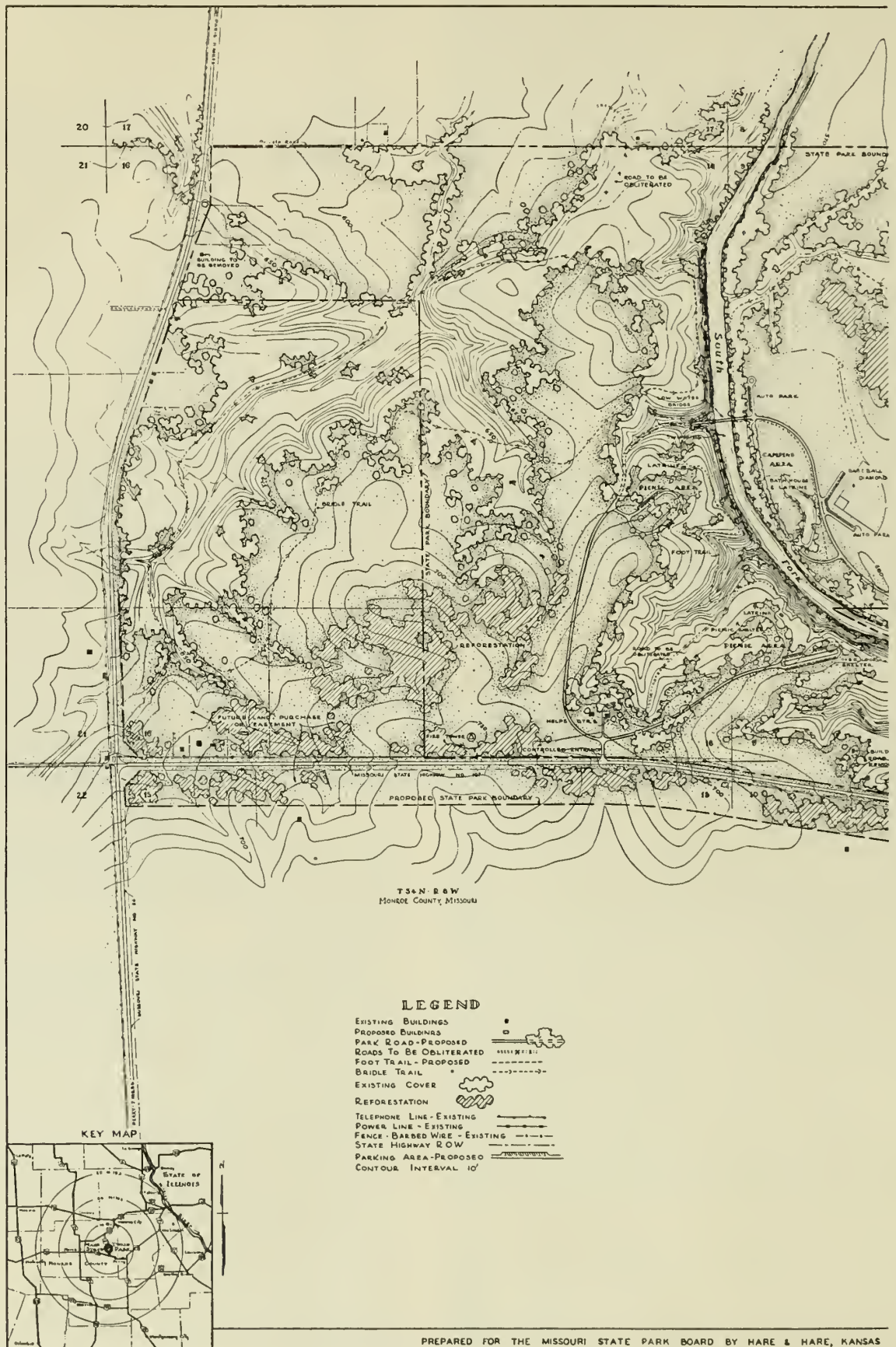
The determination of boundaries is too often a matter of expediency rather than of thoughtful planning. Boundaries should be established on the basis of size desired to meet particular needs, protection from outside influences which would be disturbing to the character of the park, and topographical and scenic opportunities. In a city the boundaries of the smaller park units are usually limited by existing developments or by financial considerations. In larger metropolitan, county or State areas there is normally more freedom and more opportunity to include complete units of natural scenery.

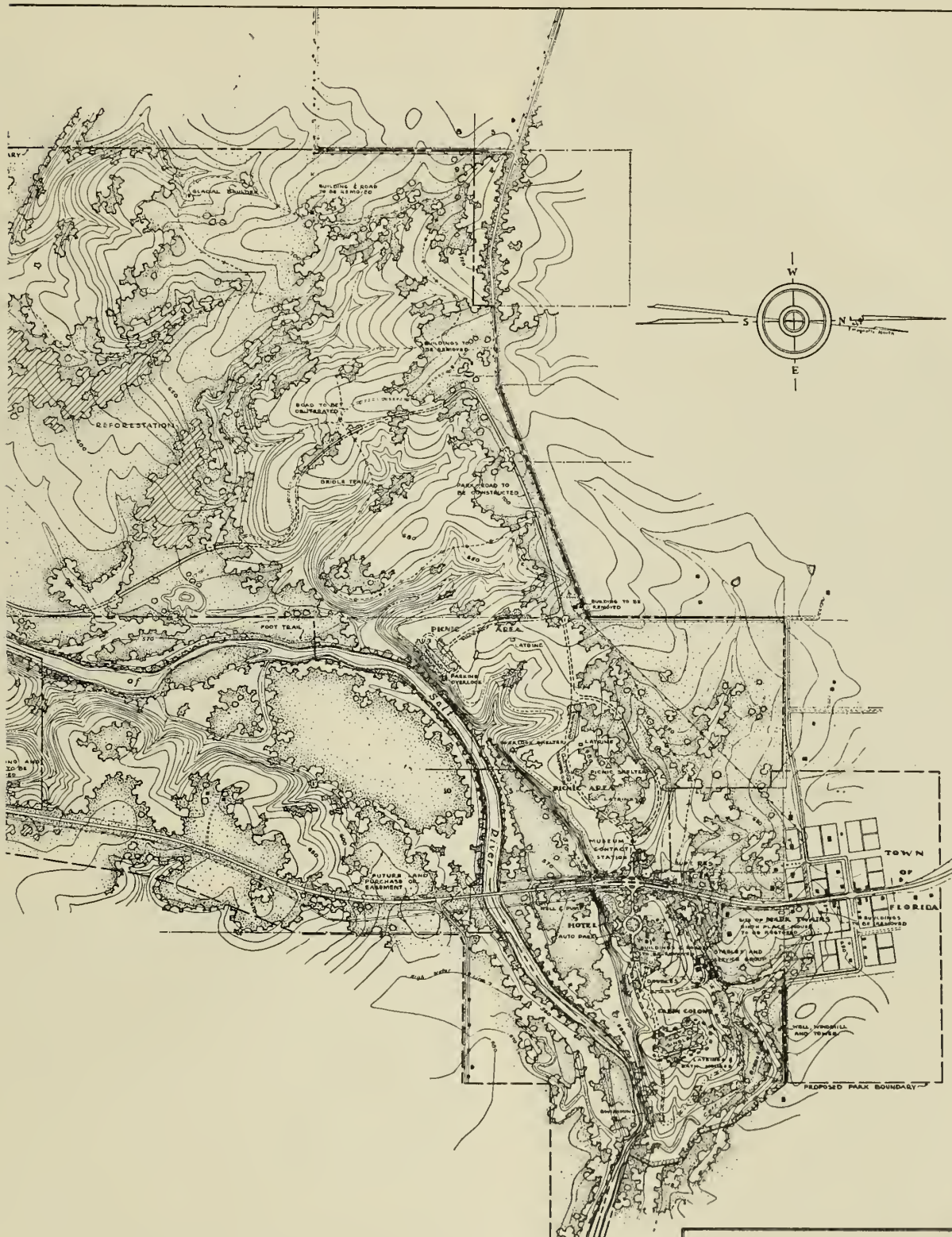
One of the most common mistakes is fixing the boundary of a park established in connection with a lake. In the sections of the country where there are few natural water areas, many artificial lakes have been built in the past few years under various forms of Federal aid. Many of these have been promoted by local communities with the idea that pleasant home sites would be available adjoining the park land and overlooking the lake. Therefore, a very limited strip of land is retained along the shore, and even with the best of control the character of the structures built on the adjacent lots ruins the entire scenic value. In many cases no restrictions are placed on the lots, with the result that unsightly stands and cheap amusements spring up to take advantage of the park patronage. The scenic beauty of a water area, as well as its usefulness for recreational purposes, depends largely on a reasonable area of park land framing it. The exact extent of the land is subject to determination in individual cases, but in a water area of several hundred acres the area of the land should undoubtedly be several times that of the water. Ideally, a complete topographical unit should be acquired—that is, the area within the valley to the adjacent horizon line, so that no outside developments can intrude into the park landscape.

Parkways offer a particularly interesting problem in the establishment of boundaries. In the type of parkway where there is no right of access to the main road from adjacent private property, such as those in Westchester County or on Long Island, the width of the right-of-way is largely dependent on topographical conditions. On a hillside a relatively narrow strip reaching to a convex break of grade above, and to a reasonable distance below the road, may accomplish the purpose, while in a broad valley a much wider strip will be necessary. In such parkways, the location of the roadway and the area to be taken must be planned in a coordinated way.

Roads, Paths and Trails

Roads are both a basic element in park design and a frequent subject of controversy. In general, with the increase of automobile traffic, there has been a tendency to decrease





MISSOURI STATE PARK BOARD			
DESIGNED BY SRL, DWS, BRL	MARK TWAIN STATE PARK MASTER PLAN		SCALE 1" = 400'
DRAWN BY BRL			DATE
APPROVED BY SRL, DWS			FILE NO
APPROVED	TECHNICIAN	DATE	
APPROVED	SUPERINTENDENT	DATE	
APPROVED	DIRECTOR - PARK BOARD	DATE	

CITY, AND BARTHOLOMEW & ASSOCIATES, SAINT LOUIS, LANDSCAPE ARCHITECTS

the amount of road in recreational areas, perhaps because of the increasing hazard involved. In smaller municipal parks, the trend is to eliminate entirely vehicular traffic. In larger suburban or metropolitan areas a reasonable number of roads are essential, both for access and for pleasure driving. In the larger county and State parks, some enthusiasts for preservation of natural scenery would eliminate all roads beyond those required for immediate access to areas of more intensive use, making the remainder of the park available only to visitors who use the foot and horse trails.

There is, of course, some validity to this argument from a conservation point of view. Nevertheless, it should be recognized that in this automobile age pleasure driving is one of the most common forms of recreation. Also, a considerable number of people, whose appreciation of natural beauty is no less than that of the trail enthusiasts, either because of limited time or physical infirmities, are unable to take advantage of the trails. In the more extensive developments, a happy compromise is possible, opening up a limited portion of a large natural park to automobiles by dead end or loop roads, and leaving extensive areas accessible only by trail. This principle is being worked out in the national parks in a satisfactory way. It would be most unfortunate to construct a road to the top of every high mountain, but the road up Pike's Peak, for instance, has given pleasure to thousands who would otherwise never have enjoyed the thrill of standing on the "roof of the world." Thus, it is seen that roads in recreational areas involve certain general policies of procedure, which, in their application to particular cases, require careful thought—in other words, planning.

In addition to these broader phases of road planning, there are numerous possibilities for detailed design. The alignment, the standards of curvature and gradient, the relation of curve in plan to curve in profile, which controls the appearance as seen in perspective, the location of the road to avoid unnecessary scars in natural scenery, and the methods of obliterating such scars, all must be carefully studied or planned if the result is to be thoroughly satisfactory.

Paths and trails are also subject to detailed planning. In the more highly developed parks, the alignment, width and grade of paths should have as careful study as in the case of roads. There are generally numerous lines of natural pedestrian traffic through the park, which, if uncontrolled, would form an unsightly pattern and cut the desirable open lawn areas. To consolidate such lines of traffic into an orderly and convenient walk system is very much a problem in planning. As in the case of roads, there is a tendency to reduce the number of walks to a minimum, thus simplifying park design and maintenance.

Water Areas

Water is nearly always desirable, both for scenic value and for recreational use. In the more artificial urban parks, it

can be used in many ways to advantage—pools, jets, cascades or lakes—all of which offer opportunities in design. Where the natural scenery is preserved, care should be exercised in any disturbance of natural stream channels. If artificial lakes are desirable, and they often are, the effect of silting in the lake, the probable fluctuation of the water level, the effects of flood, and the methods of treating the dam in a naturalistic way, are all basic planning problems.

Recreational Features

Provision for the various types of recreation is a fundamental part of park planning. If properly located or grouped, they can become an integral part of an orderly scheme, and not an unfortunate intrusion. Even in intensively used playgrounds and playfields, constructed for the most active forms of recreation, beauty can be provided without conflict, at least along the edges, by the use of boundary strips of trees, shrubbery and grass, protected from within by fences. In the larger and more natural types of areas, such as State parks, only such recreational uses as are incidental to the enjoyment of natural scenery should be permitted—that is, fishing, boating, swimming, camping, picnicking, hiking, riding, and nature study. All of these should be provided for in a master plan of an area in such a way as to produce the maximum enjoyment, with the minimum disturbance of the scenery, which after all is the primary excuse for all other activities.

Between the extremes of intensive recreational use, requiring elaborate equipment or facilities on the one hand, and the uses which depend primarily on the minimum disturbance of nature on the other, there are activities, such as golf or baseball, which can be fitted into the informal but rather finished landscape typical of the larger urban parks.

Structures

Various types of structures are required in parks, ranging from entrance gates and the simplest form of shelter, to rather elaborate hotels. Refectories, comfort stations, stables, garages and other service buildings, bath houses, boat houses, cabins, and camps all have their place in certain types of areas. No matter how carefully the general landscape setting may have been planned, ugly or inappropriate architecture can spoil the beauty of a development. The architect undertaking park structures should have a particular sympathy for, and appreciation of, the type of design which is suitable for such areas. In urban parks, more finished materials and formal architecture may be suitable, but in the natural areas only the simpler forms and materials which are characteristic of the site, such as stone, heavy timbers or stained wood, should be used.

Minor structures, such as entrances, signs and bridges can likewise enhance or detract from the beauty of a development, and should have as careful attention, both to design and material, as in the case of the major structures. Excellent precedents have been established by the National

Park Service, many of which are illustrated in their recent publication on park structures.

Planting

Standards of good taste are as important in planting as in park structures, roads and other phases of development. While the more highly developed horticultural varieties can and should be properly used in finished urban parks, whether formal or informal in character, such plants would be as much out of place in a typical State park as a dress suit would be at a picnic. Nearly every section of the country has a reasonable selection of indigenous vegetation, from which suitable material can be chosen. Normally, the amount of planting to be done in a large natural park is limited, but requires particular care to merge it into the existing native material. Large areas offer fine opportunities for the creation of broad effects in landscape composition—vistas, glades, meadows, and woodlands—through control of planting. While planting is the last step in the execution of any landscape project, it is by no means one that can be passed without thought and careful planning.

Maintenance

When all of the above phases of planned development have been consummated into a finished result, the perpetual

problem of maintenance starts. To overlook this at any stage of the planning is to admit that such planning is inadequate. With only limited budgets available in nearly all levels of government, simplicity of treatment and concentration of intensive developments are necessary for economy of maintenance.

Conclusion

A recent news bulletin of the National Park Service told a very interesting story of the unfortunate early development of Yosemite Park—of the structures and other improvements out of character with the scenery. It has taken many years and much effort and expense to eliminate the older and incongruous improvements and provide the necessary facilities for public use and enjoyment in such a way as to subordinate them to the grandeur of the scenery. Much of this work has been accomplished in the past decade.

While this decade has included many years of stress and uncertainty for the people of the Nation, out of the various relief activities of this period has come a greater appreciation for the value of planning in parks and recreational areas, as well as in other fields; the crystallization of thought in matters of good taste as pertaining to park design; and the establishment of better standards and a greater public enthusiasm for the conservation of natural scenery for the enjoyment of present and future generations.

RECREATION AS A BYPRODUCT OF RECLAMATION

by CLIFFORD H. STONE, *Director, Colorado Water Conservation Board*

IN THE TREATMENT of this subject, "Recreation as a By-product of Reclamation," the word "reclamation" means the process whereby water is made available for the production of agricultural crops in arid regions. It denotes irrigation of arid lands. Irrigation involves the diversion of water from natural streams through a system of diversion dams, canals, and ditches and, in most cases, reservoir storage of water for use when it is needed.

The word "recreation" as used in this discussion, refers to the opportunities afforded by the great outdoors for enjoyment of scenic attractions and the wildlife usually found in such surroundings.

Consideration of the subject is confined to the western portion of the United States where reclamation is practiced. Roughly, there are 15 reclamation States.

In general, opportunities for both reclamation and recreation are found in the same localities in varying degrees. The one appeals to those engaged in agricultural pursuits, and the other attracts those who are interested in nature or

indulge in the sportsmanship associated with game and fish. There is, however, a third interest represented by those who seek to commercialize these outdoor attractions. The latter profit by the tourist business which has built up an industry of no mean proportions.

It has been assumed that there is a definite conflict between these various interests; and too often there is evidence of a clamor on the part of one for full recognition even though it may exclude the other. As a matter of fact, a sound policy of conservation will preserve as far as possible both the reclamation and recreational values. It means, of course, careful planning, coordination, and a realization that in all cases it will be impossible to protect fully all these values. If these principles are followed, out of reclamation can come many times an improvement of recreational attractions; and in most cases reclamation can be so ordered as to interfere in only a limited degree with the outdoor facilities of those who seek scenic beauties and wildlife.

Mountain and stream resources have been and will

continue to be developed; but the principle of conservation should dominate their utilization rather than exploitation. The exclusive use of vast areas solely for the nature lover may be exploitation in the same degree as the unnecessary spoilage of scenic attractions for industries such as mining and agriculture. Certain areas should be reserved solely for scenic attractions and wildlife. In others an extensive recreational use is possible even though provision is made for other coordinated uses which do not in any unreasonable degree interfere with the recreational objective. There are many places in the West where the opportunity to utilize water resources for irrigation will be defeated and potential agricultural development forever forestalled if reservations for recreation purposes are attempted; but there is no reason why, out of such development, an effort cannot be made to preserve as far as possible recreational values. In such cases there will result recreation as a byproduct of reclamation.

The arid West is not now in the condition in which the Indians left it. An enterprising and hardy race of people have for decades carved out of it homes and industries. They have added to the Nation's wealth and created markets for the older sections of the country. They have opened up and improved a section where, in increasing numbers, people come to enjoy scenic wonders and wildlife in a degree of comfort which is demanded by the average tourist. A natural industrial development, in which the whole people of the Nation participated, brought about the present condition. In many cases it resulted in spoilage and exhaustion in a short space of years, without any thought of conservation, of resources which must be restored as far as possible. Such restoration is the work of both the Federal and State Governments under a coordinated program; and future development should proceed on the basis of preserving all the values possible.

The scenic wonders of the West, with the wildlife which make this area a habitat, are in a large degree the property of the public. By far the greater part of these lands is owned by and subject to the control of the United States. The conservation of the forests and the grazing on public lands are now regulated by appropriate Federal agencies. National parks are established and administered by the Federal Government.

On the other hand, a large acreage of western land has passed to private ownership; mines and mineral claims are subject to private ownership under Federal and State laws; the appropriation and control of water which arises in the mountains are subject to the jurisdiction of the State governments. The wildlife, in a major way, as in Colorado, is the property of the State, and large sums of money are expended by the various State governments for its protection, conservation, and propagation.

The opportunities for the easy and inexpensive use of water are gone and the present trend involves large irrigation and power projects which can only be financed by the Federal Government, and the cost of which is repaid by the water or power users. Floods, especially since the

denudation of many areas of grass and timber, have destroyed much of the beauty of mountain and plain. Not until recently has much attention been given to the matter of flood control in high sections of the country near the source of rivers. Soil conservation, which in reality is part of a flood program, is a comparatively recent endeavor. The prevention of floods and the conservation of soils are in the interest of the public and involve a Federal program. More and more it is realized that many projects are of a multiple purpose—water utilization, power, flood prevention, and preservation of recreational values.

National parks and national monuments, without adequate reservation for rights-of-way for storage and transportation of water, should not be established in areas which afford the only source of water for the irrigation of large areas of potential agricultural land. In many, if not by far the majority of cases, available water in such places is needed for supplemental uses. By this is meant provision for a supply of water to farmers who do not now have sufficient water to mature a crop.

An additional amount represents the difference between a crop and a crop failure. These farmers are on the land and have made sizeable investments, and the delivery of additional water to them means stabilization of their industry. To deny this chance through large reservation exclusively for recreational purposes is not justified.

On the other hand there should be no extensive drying-up of streams for irrigation projects where provisions can be made to maintain fish life. Projects can be so planned that although portions of a stream system may be seriously depleted in stream flow, other portions will be improved. By such a development the regimen of streams will be changed. Some streams within the scheme of development may be converted into scenic and wildlife attractions, where for decades their erratic flows have made them the source of destruction in certain seasons of the year and nothing short of a sandy stream bed at other seasons. During recent drouth periods, it has been realized by many interested in fish life that storage and stream regulation required for adequate irrigation facilities is desperately needed for fish culture and protection. Experience has shown that streams which periodically suffer from drouth conditions, even though there is sufficient water for fish life, provide an opportunity for fish catches which seriously deplete the stream. Sportsmanship, because of these conditions, gives way to "slaughter."

Quite aside from this change of regimen of streams is the building-up of new recreational attractions through irrigation and power projects. This results largely from the construction of reservoirs. Large bodies of water, especially in high mountain areas surrounded in many cases by timber, are attractive spots. They can be made valuable additions to the natural storehouse of things sought by the nature lover and the sportsman. This requires planning and a settled policy as to regulation of privileges afforded by them. For preservation of recreational advantages, provision

should be made for retention at all times of sufficient water for fish life. Sufficient area surrounding reservoirs under proper control is necessary to insure access. Regulation and policing of the adjacent area to prevent monopolistic control of boating and fishing privileges should be kept in mind. Otherwise the value to the general public will be largely lost and the benefits will be commercialized. In general the planning and regulations should be such that the scenic attractions, fishing and boating privileges, and opportunities for temporary abodes for those who seek such places are made secure for the general public.

To accomplish this objective involves not only planning when projects are built, but there are other considerations which should be noted.

First, there is again the question of relation between Federal and State agencies. The State laws, as has been pointed out, protect and regulate the taking of fish, and they fix the fishing season and open and close bodies of water for such purposes. State officials, expressing the general sentiment of local interests, are very apt to resent a Federal control which imposes restrictions and fees for boating or for other privileges and makes ineffectual their efforts to make such improvements available to the public under proper regulations. If reservoirs are sometimes to serve for recreational attractions which were formerly found on streams, then these State agencies will no doubt seek to maintain effectual control of these privileges. Often these storage facilities are built on public land where the Federal Government controls the reservoir site and adjacent area. In some cases the site is partly on government land and partly on private land obtained through purchase or condemnation by the project sponsors. Since the United States has exclusive jurisdiction to dispose of the public domain and reserves the right to control its use, the States are not in a position, where easement rights for a reservoir are obtained on public lands, to regulate effectually recreational privileges growing out of these water storage developments. There is then a conflict.

In the second place, there is also the conflict between private and public interests. Where the easement rights for irrigation and power reservoirs are acquired by the water users from private individuals and storage facilities constructed by them, there flow rights in the water users to control these facilities and enjoy directly or indirectly the revenues arising from their use for recreational purposes. These facilities may be privately stocked with fish and closed to the public. The fishing privileges may be commercialized.

In the case of governmental financing of a project, these recreational privileges for use of the public might be reserved at the time of authorization. This may be a solution. But when water or power users obligate themselves for large sums of money and obtain in many cases water storage at a cost which approaches the limit of their ability to pay, it seems only proper that the recreational benefit to the public should be borne by the public and the cost to the former

reduced accordingly. This principle is recognized in flood control and river and harbor improvements.

It is obvious that, if the large scale development of facilities for irrigation and power are to be almost wholly financed with Federal funds and if recreational opportunities are to be protected for the public, some plan must be worked out in cooperation with the Federal and State Governments and also with the water users who ultimately pay the cost of these developments. Undoubtedly, some legislation will be necessary, and in many cases proper reservations will have to be considered when projects are authorized. An enlightened public anxious to realize as full a measure of conservation and development as possible, and understanding the value of water and the legal considerations surrounding its use, should recognize the necessity as well as the possibility of these adjustments. Conservation should contemplate, in a reasonable degree, a balancing of reclamation and recreational values; and the program should afford an opportunity, if possible, to develop and preserve a secondary use out of that which represents the primary objective of a project.

This program of coordination in many States is being attempted through water conservation and planning boards and fish and game commissions working with Federal agencies; and these same State agencies strive to coordinate the divergent interests within the State for realization of maximum values.

Those who are primarily interested in the recreational phase of conservation of water resources should not fail to realize their great value in agriculture in the West, for there water is a limiting factor to agricultural development. Then, too, water of these rivers is claimed by many States and in some cases by other nations. The Colorado and the Rio Grande carry water claimed by both the United States and Mexico. The Supreme Court of the United States has said: "A river is more than an amenity, it is a treasure. It offers a necessity of life that must be rationed among those who have power over it. * * * " (*New Jersey vs. New York*, 283 U. S., 336.) Water of a stream may be denied to irrigation development because of possible deleterious effect on recreation in one State only to be later claimed and developed for agricultural development in another State.

It must also be remembered that in some States water cannot be legally appropriated for piscatorial purposes. The constitutions of some States, such as that of Colorado, provide for appropriation only for domestic, irrigation, and manufacturing purposes. It is not likely, because of the opposition of agricultural interests, that such constitutional limitations governing the acquisition of water rights will ever be changed.

With the disastrous effects of drouth conditions and the competition among States for the realization of the beneficial uses of rivers and streams before the opportunity is forever gone, it is likely that before many decades there will result complete appropriation. This development, of

course, should recognize, as far as possible, all resources. It means a broad outlook and an understanding of legal and physical limitations.

In this discussion the writer has recognized and advocated the development in the fullest degree possible of recreational values as a byproduct of reclamation. An

attempt has been made to indicate the limitations and problems. The solution of the problems is not offered except to suggest some of the main considerations. There are here presented matters which must be given serious consideration by those who would preserve as fully as possible all the values innate in our natural water resources.

ARCHITECTURE AND ITS RELATIONSHIP TO THE DESIGN OF PARKS

by GEORGE NASON, *Landscape Architect, Minneapolis*

PARK ARCHITECTURE and park landscape architecture must be designs conceived with an intelligent regard for the site and the environment. Consistency and appropriateness are the foundations of artistic perfection in both.

Park design is the regulation of land and the objects on it so that they may be continually useful for the diversion of humanity.

The broad planning of a park, the creation of an excellence of composition upon the surface of its ground, is landscape architecture. Within park borders the landscape architect must envisage a fittingly related whole from many more or less related parts. If he is to create a truly balanced harmony he must have a directional control of all the threads woven into the pattern. Many parts of a park are problems of preservation, other parts are creations of various professions, and still others are creations of the landscape architect himself; yet all must be welded together into single symphony by the landscape architect in his planning of the site.

This credo is not intended to promulgate a doctrine of superior virtue in the profession of landscape design. It is merely a simple statement of the integers the craft needs to solve its problem. A harmonious whole can only be evolved from a unified control of each note in the structure.

There is no question as to the high value of the essential contributions of other vocations to park design. Which profession makes the greater donation depends on the individual terrain involved. A park must be an amiable compromise of component interests and elements combined in a friendly relation to the best advantage of the area.

One cannot omit from the composition the naturalist's interest in the drama of the wildness, or the geologist concerned with the romance of past eons, the historian with his inspiration from past ages, the forester with his knowledge of plant welfare, the engineer with his urge for thorough construction, or the administrative knowledge of maintenance. These and more are all professional factors

in an intricate problem of the design of a whole which must relate rhythmically in all its parts. The landscape architect should never take lightly the contributions of other men. He needs them and must use them to every advantage.

The preservation of an isolated detail beautiful within itself or the creation of a useful organism is not in itself sufficient. Some one mind must blend all details of engineering, of architecture, of maintenance, of forestry and other professions into related forms of well-developed symmetry, and such blending is the function of the landscape architect. It is the experienced landscape architect who must coordinate the details furnished by other professions in making a park available for human use. He must supply that fundamental site plan without which fine parks cannot be created. No matter how high the existing aesthetic values that nature supplies, she never provides a plan; that must be provided by the mind of man.

Utterly insolent land, hardly tenanted by even a tincture of the shadow of charm, is at times assigned to public park use. To adapt such land to recreation, to see within it an embryonic beauty which may be developed, requires high imaginative ability in landscape planning.

More generally, park lands are chosen because they originally contain within their boundaries inherent amenities pleasing to man. To preserve and enhance these existing park amenities requires an even greater sympathetic proficiency in design.

A good landscape plan molds and advances the heritage of values germane to the park area; it provides and preserves breadth, repose, simplicity, and fitness; it strives for harmony in the several parts and for the stimulus of man's imagination. Working with the materials of nature, many of the effects will be those that nature in time could well have produced herself. From this follows that disappointing anomaly of landscape architecture, which is: the

greater the perfection of design the more likely man will forget that the designer has been at work.

Many of the best works of the landscape architect lie buried within the enhanced rhythm of original natural charms, while his failures live on forever, clamoring hell-hags loudly depreciating the good name of the profession.

The landscape architect may well be just a little jealous of the architects who can receive credit for their better works.

Among the followers of the many vocations that enter the province of park design, the architect is probably the man who is most nearly in sympathy with the landscape architect. He, too, is interested in composition.

The park architect's project is a building. Since a building is generally a concentration point of high human use, it is a most salient part of the design for the whole park. The building is a part of a larger whole and the architect must accept the restrictions imposed by the other related parts. These restrictions applied to related parts are the problem of the landscape architect and it follows that he must impose them on the architect, and to that extent he controls the architecture of the building.

These restrictions are not to be too greatly feared. Fortunately, restrictions develop fertility of imagination and often improve the ingenuity of design.

The control of the landscape architect must be cooperative. It must give to the architect every possible freedom. The architect is far more deeply versed in the details of building construction than is the park designer. He should be given every possible encouragement to proceed with his work with a freshness and freedom of thought, remembering always that simplicity and restraint are cardinal virtues in parks.

In striving for simplicity many park architects, very often under the leadership of landscape architects, fall into rudeness. It should be remembered that we are heirs of the past, that we live in a high state of civilization and inherit the abilities and tastes of generations of skilled builders.

Rude buildings are an affectation. They can only be produced by an effort so deliberate and self-conscious that they lay the designer open to the charge of sophistication. They are not a protest against overelaboration but an elaborate protest against progress in architecture.

The landscape architect tries to harmonize his works with natural phenomena. As far as nature is concerned her methods and laws appear unchanging. But when one starts dealing with humanity he is working with a force of definite progress. The precedent of the past decade may be already outmoded, unnatural, and inappropriate to modern man.

Man is a part of nature and his progress in the arts is natural. His progress in the craft of building should be used to its fullest extent in park structures, for that progress is as natural a force as those forces that raised the Tetons for our admiration.

This does not mean that we should construct gaudy park buildings, but that we should erect simple, reverend struc-

tures built to conform to the best progress of the builder. In general they should be an underchord in the symphony of the whole design. At times, in a colorless tract, they may rightfully become the dominating theme.

There is nothing so quarrelsome with a friendly park as a building outruding the rudeness of the pioneer: cartoons of his dignified deprivations. These rough buildings, wrangling with nature, can already be numbered in legions. The little uncouth cabin of our ancestor has the dignity of the best that was in the ability and the financial resources of the man. The glorified pioneer structures of today, some 100 and 200 feet in length with an exaggeration of every uncouthness produced at colossal expense, are a species of tawdry circus showmanship, not examples of simple honesty. They are designed to awe rather than usefully charm.

This is not a criticism of those fine authentic historical reconstructions for historical reasons, but of those buildings which degrade our parks with a rawness of construction outdoing history. We should not copy the crudities of the pioneers' buildings. We should follow the spirit of the pioneer who did his best with that which he had.

In general, park buildings look well when built of indigenous materials, if these materials do not indicate a destruction of that which we would preserve, and if they tell a story of economical, imaginative, and ingenious use, consistent with substantial, permanent construction.

Park buildings should be as permanent as the progress of the arts and funds available can make them. Well conceived, well built, modern buildings are milestones in the progress of architecture. They have a continuing charm that mellows as they become history. It is axiomatic that men in future years will build better buildings, but, could we construct a fine building for eternity today, what romance would it not have a thousand years from now!

Temporary buildings are the scourge of parks. They should never be designed, much less should they be erected. They are shoddy when fabricated and litter the parks for lingering years, long after their quickly fading value has departed. Public bodies are slow to order the destruction of any public building. Some new utility is always found to prolong the life of these shambling rookeries. One trembles to think of these transient shanties, bedeviling, as they now promise, for eternity, continually repaired and rehabilitated, making slums of our parks.

As earlier stated, it is the landscape architect who must be responsible for the bringing together of all the several parts of a park into a harmonious whole. The architect, with his own training in composition, can well appreciate this. He, therefore, is generally very agreeable to accept the cadence of the park design as the determining cadence of his structure. Of all the interested groups in park development, he is the one whose fundamental training aids him in quickly grasping the viewpoint of the landscape architect.

Park architecture must tone well into the surrounding picture as produced by the park designer, fitting into the ground forms and becoming a part of the scenery it occu-

pies. It should have the feeling of sturdy permanence, not be a fleeting, temporary thing. It will have simplicity and restraint. It must be an individual design, not a standard repetition. It must consider people in the present natural state of progress and be a structure in which modern man belongs.

Modern man is a part of nature—in any case, as much a part of nature as his pioneer prototype. He has heritage of rights in a natural preserve; not a right to dominate and destroy, but a right to enjoy, to preserve and protect, that other men and other generations may equally enjoy man's place in nature.

STATE PARK CONCESSION ARCHITECTURE

by ROSS CALDWELL, *Architect Engineer, Division of Parks, State of Illinois*

IS THERE SUCH A THING? The answer is a debatable one, because "Parkitecture" has already established itself through the adaptations of various modifications of well-known architectural mediums. It, therefore, is recognizable as having a character that befits the unrestrained natural settings into which the handiwork of man is considered necessary to develop fully the functional use of a God-created area. Consequently, when a concession is decided upon as being required in a State park, the exterior architecture is either definitely pre-determined in that park or else the adoption of a generally familiar park style seems very logical.

It is true, however, in recent months (perhaps we cannot say years) that there is a definite trend away from the original idea that a rustic park structure was the only possible type of a building that could be placed in a park. Maintenance, alone, has made us reconstruct such initial assumptions.

Thus clarifying the subject, we still might contend that though there be no concession architectural style obvious to the layman, there is unquestionably a hidden theme in design that repeats itself; much as a musical theme occurs time and time again in an operatic score or as the repetition of an architectural motif or detail on the facade of a building.

Such a theme is not only pleasant to hear or easy to look at, but it is absolutely vital to the success of such musical or architectural work. And so this theme of design is equally vital in this phase of State park planning; and to whom? The operator of the concession? Yes! The State, with the responsibility of making a well-rounded park program available to its citizenry? Yes! But most of all it is vital to the individuals themselves, who use the concession facilities.

Let us break down the types of State park concessions into two general classes, namely, Food Concessions and Other Concessions, including overnight facilities.

Since man's first desire for physical sustenance continues apparently *ad infinitum*, regardless of environment, it would

appear that the food concession angle should be the crux of this article.

Personally, I believe that merely because the subject is not fully understood, we have been prone to create mental pictures of the park concession as being the undesirable ugly duckling in our midst. Yet, it is to be remembered that this same ugly duckling of fairy book tales not only made as much noise, demanding attention, as did its perfectly formed brothers and sisters, but it attracted the most attention.

Most of State park designing during the last decade has been predicated on idealistic theory which was very reasonable. However, experience has proved that, after all, our efforts should be directed toward the development of the restrained maximum recreational potentialities and conveniences for a widely differentiated citizenry. This citizenry, incidentally, is increasingly more conscious of the fact that it is paying the bill and consequently should have the right to express its opinions regarding park facilities, or perhaps the lack of park facilities.

Our public is not always idealistic, however. Since it unquestionably holds the whip hand, I believe we should more carefully analyze and give more consideration (particularly in the food concession phase of park planning) to the ever-changing ideas of food service and also to mass public reactions, which reactions show unmistakable trends of thinking.

These expressions are always comparative, and either our park facilities compare favorably or they do not. Compare with what? That which the public has experienced elsewhere; that to which they are accustomed.

A well-known hotel chain was greatly expanded with the aid of a now trite slogan: "The guest is always right." Even though we may not believe it, nevertheless it registers in the mind of the guest, and he likes it; thus we can learn much by observing the individuals who frequent any particular park area.

Through deductions obtainable from various periodic traffic counts, we know that the greatest percentage of park

visitors come to a State park from within a radius of 75 to 100 miles, which results in localizing our problem of analyzation of the public demand. Consequently, whether the type of population is principally rural and from the small communities, or from heavily industrialized and urban sections, is important, because per capita income is invariably reflected in per capita spending whether at concessions in State parks or elsewhere.

What individuals have been accustomed to at home is what they will want and expect away from home, insofar as concession facilities, type of food service, and cost are concerned. The standards can and should be raised slightly by comparison, but they cannot safely be extended much beyond that expected point if the concession is to be operated successfully from the concessionaires' monetary viewpoint, or if the concession facilities are compatible with the food customs of the park patrons of that locality.

Too, basic wealth is largely directly traceable to the soil and industrial productivity, and often one portion of the State is much better off, financially, than another portion. Consequently, individuals coming from higher income sections spend more.

Now, if we are willing to recognize that the proper analysis of this variable human element is the first step toward the correct solution of the consequently variable concession problem in State parks, we can then answer in the affirmative the question, "*Why park concessions anyway*—do we need them?"

The selection of the proper type of State park food concession is definitely predicated on making this accurate survey of the consumer public, and the type of concession is modified as to size in accordance with the popularity of the specific park area.

A State naturally desires that all park users be given a high quality food service at reasonable prices. To assure this, it might appear that a State should operate its park concessions. I am opposed to that because it would be practically impossible to control political patronage and the personnel at the same time. However, a compromise could be reached whereby the State might furnish its concessions with the proper equipment, and so protect itself with lease agreements that the concessionaire would constantly be aware of the fact that a misstep in operating procedure or a letting down in personal service would terminate his lease.

It is necessary, after a concession is built, to find the right type of concessionaire who, in spite of his primary desire to make money, is willing to recognize the parkman's point of view and to respect it. After having found this operator, it is equally as necessary for the State to give due consideration to his problems.

With this in mind I firmly believe it is better not to have a concession at all than to have one which is poorly operated or one which results in loss of money to the concessionaire because of a bad concession location, a low per capita spending patronage, an improperly designed building, or inadequate equipment.

A common sense approach to the human relations problem and an intimate knowledge of the people who make up the majority of the visitors to a State park, and where they come from, determine largely the most desirable type of concession operation.

Locating a food concession is a job which requires us to make the best of a bad situation, since food concessions are, aesthetically speaking, intruders. However, we cannot successfully isolate them from the center of activity and expect people to go out of their way to patronize them. They just will not do it without considerable grumbling and criticism of the park operation.

Therefore, our problem is to screen out with plantings the individual portable or small concession stand and, where possible, to use a combination building, incorporating the food concession with a shelter structure and comfort station if same can be properly segregated.

This building, whether it be a single or a combination building, would seem best located adjacent to the principal parking area which services the most intensely used picnic or recreational area. Such a related group usually establishes the center of activity.

Lodge areas, it is believed, should be considerably removed from the center of activity, because they cater to a slightly different type of park visitor who is bent on wanting (and willing to pay for) better and more quiet accommodation and service than the single-day park patron.

The word "design" always suggests to me the old expression, "The Plan's the Thing." How frequently in the past have hotel designers carefully thought out and planned public space and room arrangements, and then labeled as "Kitchen" the apparently unusable space which was left on the plan after everything else had been thought of except the food service or so-called "back end" of the house.

That is not the way a food-preparation center is developed if it is to be operated economically and successfully.

It makes little difference insofar as principle of design is concerned whether the food concession be the smallest portable, the largest type permanent stand, or a lodge kitchen grossing \$500 per day, because consideration must first be given to the following necessary features demanding careful design:

1. Number of Persons to be Served.
2. Type of Food Service.
3. Points of Food Service.
4. Lines of Food, Consumer, and Bussing Traffic.
5. Receiving and Storage of Supplies.
6. Food Preparation.
7. Dispensing of Prepared Foods and Beverages.
8. Bussing and Clean-up Service.
9. Food Checking and Control.
10. Equipment. (Receiving and Storage, Food Preparation and Food Dispensing; Clean-up and Bussing; Food Checking.)

The above items must be well analyzed in order to de-

termine the proper type and size of concession structure to be built.

Number of Persons To Be Served

As a result of traffic counts, State park attendances are accurately determined, and when new parks are opened to the public we have comparative data in similar parks to guide us regarding potential park attendance.

According to annual audits of daily sales in food concession stands in the average State park, it would seem that about 25 percent of the total attendance per season patronizes the concession stand, and the number of persons catered to will average 150 to 250 persons per square foot of concession stand area per park season, assuming the minimum portable stand to contain approximately 100 square feet.

The average State park lodge requires overnight accommodations during the season for 50 to 75 persons per day (a comparatively small percentage of the daily park visitors) and the dining-room business will usually be about two to three times the guest count, due to transients and scheduled banquets.

Again, referring to the analysis of public demand, which after all is generally determined by the type of individual making up that particular park-public, the proper selection of the best type of food service is easily made, such as *a la carte* or *table d'hôte*, counter, or table service.

Points of Food Service

The points where prepared food or beverages are dispensed to the consumer vary according to the type of concession and food service to be rendered. These points must, however, be definitely located.

The portable concession stand very likely would have but one point of service. The small permanent stand might have three; the large permanent stand, four; and the lodge may have one or more private dining rooms, a dining porch or terrace, and the main dining room, all four points of which must be given proper value when relating the various service departments, such as receiving and storage of bulk and unprepared food supplies; food preparation; dispensing of prepared foods; clean-up and bussing service; and the food checking and control.

Lines of Food, Consumer and Bussing Traffic

After determining these points of service, we know that our real problem is to establish direct food-travel or flow lines to the point of consumption and to get the consumer to this same point without making it necessary for him to cross the food-travel line, the bussing, or scullery traffic lines. None of the traffic lines should cross each other. Generally, the line of bussing service is a continuation of the food-travel line, returning in the opposite direction.

These so-called lines of traffic are as important to a successful food-service operation as motor-traffic lines are important in keeping traffic under control at a busy street intersection.

Receiving and Storage of Supplies

The function of this department should be designed to provide ample space for receiving all kinds of food and beverage supplies required for a specific type of food concession, also the nonproducing supplies such as brooms, mops, buckets, cleaning materials, etc., generally classified as expendable items.

A covered receiving or unloading platform (truck bed height) and a receiving room is suggested for the lodges, the larger restaurant lay-outs, and organized camp kitchens, thus enabling quick and easy delivery and unpacking. A small, compact, separate room is recommended for this purpose in the portable and the small and large permanent concession stands.

In the smaller stands a portion of the unprepared food and beverage items can be placed directly under the service counters, available for prompt and immediate service to the consumer, and, in principle, requires comparable distribution of food items but on a lesser scale than the larger lay-outs. In the larger operations these supplies are immediately unpacked and distributed to either the storeroom, the cooler, or the bulk storage.

Food Preparation

The function of this department is self-evident and demands that food be carefully and well-prepared and promptly, but courteously, served.

Several subdivisions of this department are necessary, namely:

1. Vegetable Preparation.
2. Meat and Fish Preparation.
3. Cooking and Baking Station.
4. Preparation of Pantry Items such as salads, bread and butter, milk, cream, coffee, iced tea, soft drinks (iced), ice cream, pastries, etc.

Dispensing of Prepared Foods and Beverages

This service varies, depending upon the type of concession and type of food service being used.

1. The small concession stands combine the various food receiving, storage, preparation, and serving operations into general duties for one individual or several individuals doing a similar job at different points of food service, thus using the *direct* or *counter service*.

2. The organized camp kitchen method of dispensing food is through the *cafeteria type* of service, with self-bussing.

3. The average park lodge or restaurant would use the *banquet type of service* (predetermined menu) for serving large groups, or *waitress service* for the individual diner.

The dispensing problem requires prompt service of both hot and cold foods, and consequently each of the four types of service demands special study in order to develop high standards of operation.

But even with the very best equipment and the most logical design possible, the desired food service is not assured without adequate and willing personnel to dispense it.

Clean-up and Bussing Service

The important thing is to get all soiled dishes out of sight promptly and to a place where excessive odors are well confined. This same principle applies to the bussing of dishes in all lodge, restaurant, and camp kitchens.

Food Checking and Control

Proper control is important to the successful operation of any concession and should be given careful consideration.

Equipment

The necessary concession equipment for the various types of park concessions requires a more or less specialized study and practical lay-outs are obtainable through nationally known kitchen equipment manufacturers.

Personnel

Minimum personnel, naturally, is most desired by all State park concessionaires, and the bane of their existence now is trying to comply with State and Federal employment laws governing wages and hours.

Uniformed personnel, neatly attired and clean in appearance, is mandatory.

Construction

I firmly believe that all park maintenance men are in one accord on the subject of permanent construction for all park structures, and, particularly, for concession structures.

Furthermore, most concessionaires are not interested in rustic and so-called park-like interior treatments of work spaces. What they want in the interiors of restaurant and lodge kitchens (with their various supplemental rooms) and in the concession stands also, is a finish that will withstand the maximum use and abuse and look well with the minimum daily clean-up.

Briefly, I believe the subject might be covered as follows:

1. Disassociate the interior architecture of these work spaces from the exterior character of the structure.
2. The floor construction should be concrete, quarry tile or resilient composition materials.
3. Provide ample, well-located floor drains.
4. Wall construction, including base, should be some

form of glazed masonry (tile or brick) with special trim (same material) for all openings.

5. Ceilings might well be white-coat plaster with three to four built-up coats of semigloss enamel finish.

6. Steel window sash is preferable to wood sash, generally, but it does not lend itself to the exterior park structure design. All openings must necessarily be screened with small-mesh copper screen wire.

7. Hollow metal doors should replace wood doors where possible.

8. Recessed electric fixtures and ample convenience outlets are desirable features.

9. Use steel shelving where possible, and even masonry shelving can often be incorporated.

10. Add to the above the proper stainless steel and nickel plated equipment properly set 6 to 8 inches above the floor, so that the floor is completely in the clear, and the resulting operation should be sanitary and require the minimum of maintenance.

Where it is absolutely necessary to use wood materials in the construction of the smaller concession stands, it is recommended that all surfaces be painted light gray and that no stain be used on the interior of the structures.

Conclusion

Much that has been related herein concerning food concessions in State parks, insofar as careful location, design, construction, and operation are concerned, applies to other park concessions such as swimming pools, riding stables, boat houses, camp stores, overnight accommodations, etc., but each one would require a detailed study, and space does not permit further reference to them.

An effort has been made herein to set forth the generally accepted principles governing the design and construction of food concession structures, and it is hoped that State park concession exterior architecture will continue to be individual and that interior architectural results will have a tendency to stabilize.

If such can be the case, we will have a much happier family of park men when it is considered that the park planner, the structural designer, the maintenance custodian, and the concessionaire are, after all, "bed fellows."

RESTORATION OF MISSION LA PURÍSIMA CONCEPCIÓN

by FREDERICK C. HAGEMAN, *Architect, Consultant to the Civilian Conservation Corps*

OF ALL THE HISTORIC MONUMENTS throughout the United States, there are few more colorful or unique than the Spanish-Franciscan missions of California. Beginning in the year 1769, these 21 outposts of European civilization were stretched like a great chain along the Pacific coast from San Diego to Sonoma, a distance of nearly 700 miles. For nearly three-quarters of a century, the missions formed the backbone of Spanish and Mexican colonization; they had for their purpose not only evangelism, but broad economic and social functions. Although Latin authority ended in 1846, and the missions have fallen into various stages of ruin, their influences have survived in the agriculture, customs, and architecture of modern California.

Until recently, a fragment of the ruined Mission San Francisco Solano, preserved at the State Historical Monument at Sonoma, was the only mission site publicly owned. With few exceptions, the others remained under the control of the Catholic Church, and those portions which generally have survived are the churches, giving a very incomplete picture of the original appearance and purpose of the mission. Through the aid of Santa Barbara County, the ruins of the Mission La Purísima Concepción near Lompoc were acquired in 1935 as a State Historic Monument which is administered by the California Division of State Parks. Federal cooperation by the National Park Service, and assistance of the Civilian Conservation Corps has enabled the State to undertake at La Purísima the largest scale investigation and restoration of any mission yet attempted.

Although in an advanced state of ruin, this site presented unusual opportunities for investigation and more complete restoration of a mission community than previously possible, due to its comparative isolation and unchanged surroundings. Four years of development have focused widespread attention and caused much favorable comment on the three buildings which have been restored and partially furnished. Other buildings are projected which will round out the picture of the original early day settlement and illustrate many activities and handicrafts which the Indian neophytes learned under the tutelage of the Franciscan padres and their coadjutors.

During two and a half centuries of experience throughout the vast dominions of Spain in the western hemisphere, the mission had proved itself the most successful means of colonization. It had been learned that if these institutions were to be successful, the Franciscans must be entrusted not only with the spiritual conquest of California, but with temporal authority as well. Each mission, therefore, became a self-sustaining unit under the complete direction of the senior missionary in charge. Thus, they were the builders, agriculturists, manufacturers, and traders of this great new

territory, in addition to being the teachers and spiritual leaders. Beyond their cultivation of basic foodstuffs to supply the population, they successfully introduced into California many of the fruits and flowers for which the State is noted today, notably oranges, lemons, olives, dates, and figs. Grape culture, and production of wines and brandies, began as early as 1785. Olive oil is another important modern article first produced at the missions. The gardens and orchards yielded abundantly flowers, vegetables, and fruits which were brought from the old world to transform the virgin land.

Stock-raising was hardly less important, for on the *ranchos* apart from the community, the great herds of cattle and flocks of sheep yielded food, hides, wool, and tallow which were of major importance. Trade in hides and tallow with the merchant ships which now visited the coast furnished needed revenue. The mission itself was a busy manufactory, converting wool and cotton into cloth, blankets, and clothing; the hides into leather, shoes, and saddle equipment. Some 30 crafts and trades were taught to the Indians, which included the building trades, carpentry, blacksmithing, pottery making, and many others. Building materials such as lime, bricks, and tiles were also produced and sold.

The missionaries, zealous in their Christianizing endeavors, required strict observance of the tenets of the Catholic faith. Feast days and *fiestas* were frequent, however, during which dancing, singing, athletic contests, and other simple pleasures made life enjoyable to the neophytes and to the settlers who brought their families from distant ranches to enjoy the general gaiety.

The decree of secularization made an end to the control of the padres in 1834-35. The wealth of the missions was dissipated during the following years; the Indians scattered; the buildings, abandoned and neglected, fell slowly into picturesque ruin. Modern cities grew up around many, obliterating most of the buildings, leaving perhaps the church to survive as the only remnant of the once busy and extensive community.

The history of La Purísima Concepción is somewhat typical of the rise and fall of the missions. In order of founding it was the eleventh in the chain. The ceremony was conducted by Father-President Fr. Fermin de Lasuen at the site on December 8, 1787. This original site, within the present town of Lompoc, on the southern side of the valley, was not destined to be the final location, for in the year 1812 the southern coast of California was rocked by a series of earthquakes virtually destroying the establishment which had been developed during the past 25 years. Little exact knowledge about the plan or appearance of this mission exists, except for the meagre reports and records

which the padres were required to keep, in which it is recorded the population reached its maximum of 1,520 in the year 1804. It was an extensive group, however, which has been described as having a central plaza 400 feet square, around which were disposed the various buildings after the manner of other California missions. The only visible remains now are one or two fragments of walls, but a large part of the foundations remain under several feet of eroded soil on the southern edge of the town.

The padres had not been altogether satisfied with this location. The road north and south was separated from the mission by the Santa Ynez River, which during the flood season was oftentimes impassable. It was decided, therefore, to rebuild on a new site which had been selected directly on the main road in a sunny, well-protected little valley about four miles to the northeast. It was a tributary canyon to the broad Lompoc plain which they called *Los Berros* (The Watercresses). After due permission had been received from the Governor, a 10-year building program was begun in 1813. It is this site which now constitutes the State Historic Monument.

The courageous and vigorous administration which La Purisima enjoyed during this period reflected the character of the senior missionary, the Fr. Mariano Payeras, who came to La Purisima in 1804. His abilities won for him in 1815 the appointment of Father-President of the California missionaries and in 1819 he received the highest possible title, that of Commissary Prefect. His activities at La Purisima and his administration of mission affairs in general place him high on the roll of able men who served in California. He died in the year 1823, and was buried in the church whose building he himself had directed.

Payeras saw his mission through catastrophe, rebuilding, and renewed prosperity, but he was spared the increasingly troubled days which followed. In 1824, through what has been attributed to the molestations and exactions of the soldiery, an Indian uprising occurred during which four travelers were killed. The mission was seized by the rebellious natives, and troops from Monterey were required to restore order. This occurrence was symptomatic of discouraging conditions under the new Mexican regime, which had declared itself free from the Spanish crown in 1821. Population declined steadily, the herds and flocks decreased, and the reports of the missionaries indicated a dissatisfied attitude. Affairs were placed in the hands of a political administrator when the decree of secularization was effected in 1834. The inventory at this time indicated an appraised valuation of the mission buildings, cattle, goods and church articles totalling \$62,585.00. During its 47 years of existence the fathers had baptised 3,314 persons, and 407 Indians remained on the rolls at the time of the transfer. During its more prosperous days, the live-stock numbered over 23,000 head, but had dwindled to 14,000. Eleven years later, the buildings, furnishings and some land were sold at public auction for the sum of \$1,110.00.

The abandoned buildings fell gradually into ruin during the following years. The handsome residence building, once the home of the friars and haven for the traveler, was occupied by private owners and received some care, but the other buildings were in complete ruin. Some disappeared entirely. Efforts in 1905 to save the residence were unsuccessful. The rotting roof timbers were giving way, the heavy tiles crashing to the ground, so were removed altogether. The adobe walls, unroofed, were now at the mercy of wind and weather, and in a few short years many of them were reduced to the ground; others projected picturesquely from the grass covered mound resulting from the erosion of the walls. Everything of a movable nature was ransacked by souvenir hunters; furniture, doors and tiles had been scattered far and wide. Of the original trees, flowers and shrubs only a giant pepper tree remained to shadow the ruin and one gnarled survivor from the old pear orchard about a half-mile distant made a brave display of blossoms each spring.

Such was the condition which faced the California Division of State parks when the site was acquired as a State Historic Monument in 1935. In spite of the advanced ruin, the most encouraging feature lay in the fact that the pastoral surroundings remained largely as they were in the flourishing days and that the ruins themselves had not suffered changes or "improvements" which would have destroyed their value as original documents. Whether or not sufficient information could be secured through archeological investigation, and documentary and pictorial sources to provide a sound basis for restoration remained to be determined.

Nearly a year was occupied by research and investigation before actual work of reconstruction of the residence began in June 1935. During this period, the State Park Commission appointed an advisory committee, headed by Wallace C. Penfield, Santa Barbara County planning engineer, to study the broad problems of the newly acquired monument. This committee, whose members were persons qualified in different pertinent fields, met with the local CCC technical staff, reviewed the findings, and forwarded recommendations to the Park Commission for final decision.

The archeological investigation of the ruined residence required several months to complete. Stripped of the accretion of soil washed down from the mud walls, the plan of the building and many of the details of its construction could be recorded. Weathering had reduced the walls to an irregular outline, and totally destroyed some down to the foundations, but it appeared feasible to preserve much of the front wall, with its doorways and window openings, and the remaining tile columns which stood along the corridor. Research had produced a valuable fund of information about the missing portions to supplement the archeological data. This consisted of published material, original documents, sketches, drawings, and photographs, which, when reviewed by the advisory committee, led them to recommend in the spring of 1935 that preservation and

restoration work be undertaken as soon as plans could be drawn.

This structure, which was the principal and most substantial building of the group, is an excellent example of the simple, yet impressive, architecture which characterizes the work of the Franciscans in California, and continues to influence modern design in this region.

The building was described by Fr. Payeras in his report of January 1, 1816, in the following terms:

"We have built a wing 100 *varas* long (278 feet),¹ containing a double row of rooms, with walls an adobe and a half thick, and a roof of tiles, which serves as dwellings for the Fathers, with all their help (servants), rooms for guests, a chapel, and the rest for workrooms."

It was, in fact, not only the residence of the friars, but the administrative center of the mission, wherein its numerous business affairs were conducted, officials and travelers were welcomed, and certain work was carried on. Its cool austerity was relieved by a generous *corredor*, or colonnaded porch along the entire east side, from which the padres could view the central area with its pools and fountains, and the houses of their Indian charges on the opposite side. The unique design of this colonnade lends the building its chief architectural distinction, for in it are combined dignity, sturdiness, and a delicacy of detail and proportion which is completely satisfying. The walls of the building itself are simple, broad surfaces, unbroken except for the necessary openings, which are elliptically arched and often protected by wooden *rejas*, or grilles. The floors include several materials—tile, hewn redwood planks, adobe brick, and in places a layer of yellow sandstone, soft enough to be tamped down to form a smooth, unbroken surface. Little decoration, save simple painted bands of color, was used on the walls.

A chapel was incorporated in this building, intended for the private use of the friars. The congregation assembled in the large church, some hundred yards away, built during the year 1818. When evil days fell upon the mission, the church became unusable. The altar and church articles were moved up into the chapel, which was then converted for public worship. This has led to confusion on the part of later writers, who described the church of La Purisima simply as a part of this building. In the chapel the pulpit, railings, and altar received the greatest decorative treatment. The carved wooden pulpit was elaborate with gilt and panels picturesquely painted to represent marble, while above the altar, carved and similarly decorated wooden niches contained figures of the Holy Virgin, whose Immaculate Conception the mission commemorated, St. Anthony, the Seraphic Doctor, St. Bonaventure, and the Child Jesus. The tones of the religious paintings and the Stations of the Cross which lined the walls contributed to this simple white-washed room a spirit of reverent dignity.

¹ Archeological measurements record the extreme dimensions of this building as 318 feet by 79 feet, 6 inches.

The restoration of this building has employed a combination of modern engineering and a revival of ancient methods. The problem of preserving the original walls, weakened by moisture, and their inclusion into the fabric of the restored structure was solved by careful underpinning with a system of concealed concrete girders and posts. These preserved portions are permanent examples of early building methods and furnish a backbone of authenticity for the restoration. Original columns, openings, stonework, and plaster work received a minimum of treatment beyond absolutely essential repairs. Adherence to identical materials and finishing treatments make it difficult to detect where new joins old. For example, bricks, tiles, and woodwork have all been manufactured on the premises by CCC enrollees under conditions closely approximating the original. Timbers were hauled from forests, and ancient tools, such as the whipsaw and adze, were used to work them into beams and planks. Roof and floor tiles were manufactured by hand from the raw clay. Doors and shutters, whose design was reconstructed from fragments, were hand carved by enrollees whose craftsmanship compares accurately with the originals. Through such methods, the restoration has gained an accuracy in spirit not otherwise attainable. While no restoration can regain the values which have been lost, the conservation of the surviving portions and their inclusion into a rebuilt structure which preserves a fine example of early California architecture offers an interesting argument to those "purists," who, on principle, oppose all restoration.

La Purisima claims other historic values through collections of accurate replicas of furniture, hardware, lighting fixtures, tools, and implements. Its collection of historic plants and fruits, gathered from the missions of all California, is the most comprehensive known. Where archeological evidences were missing, various authentic examples of door latches, locks, bolts, and hinges from over a half dozen missions have been reproduced. Similarly, furniture with which to furnish the rooms to illustrate their former usage has drawn upon nearly all the missions for the meager examples which remain in their possession. An interesting collection of early types of lighting fixtures, lanterns, and sconces is also available for study; some of these are unexpected combinations of crude wood cores, characteristically painted, to which are attached delicately wrought and chased brass cups, ornamented with cut-glass pendants. These were most probably brought from Mexico or South America.

The foreground of the residence in which are located three fountains and a large cistern, originally laundries and source of domestic water, has been planted with historic fruits and flowers descended from mission times, supplemented by native California shrubs. By means of root grafts onto new stock, original pear trees from six different missions yield their fruit today. Pomegranates, grapes, figs, olives, dates, and artichokes mingle with old Castilian roses, hollyhocks, verbenas, nasturtiums and many other

flowers which the padres cherished in their gardens. Many are authenticated specimens.

Meanwhile, as restoration proceeded on the residence, continuing exploration of the grounds laid open the foundations of 10 other buildings of various sizes, besides miscellaneous other structures such as the tallow works, reservoirs, pipe lines, and aqueducts. Slowly the plan of the settlement took form; a form unlike the quadrangular arrangement which all other California missions employed. The La Purísima group at the second site appears to be unique in disposing the buildings as individual units, each detached and complete. The only semblance of a *patio*, or plaza, is the open space, across which face two opposing lines of buildings. On one side are ranged the residence, the building housing the soldiers, *mayordomos*, and workshops, the church and cemetery. On the opposite side are the buildings of the neophytes, and apparently the infirmary. Other utility buildings are placed somewhat apart, such as the large warehouse and the blacksmith shop, while behind the residence are two small buildings not yet definitely identified. Traces remain of earlier wooden structures along the same general axis of the principal group. The explorations have therefore added a new form of the mission plan to California architectural history. Various reasons have been advanced in explanation of this arrangement, among them the theory that any fear of attack from hostile Indians had disappeared, hence no fortified central area was needed; that the topography was not well suited to the patio plan. Most probable is the theory that the earthquake experience was still strongly in mind, and Payeras may have considered the separation of buildings a safety measure in case the experience were to be repeated.

With such data at hand, widespread interest urged the restoration of the complete community. Various authorities in the field of archeology, history, and architecture emphasized this unique opportunity presented at La Purísima. Wrote Dr. Herbert E. Bolton, member of the National Parks Advisory Board: "As a result of what I saw, I am very much impressed with the opportunity there to provide for the public a rare educational feature—a

complete mission establishment—such as it is not possible to prepare anywhere else in the United States."

The restoration of the church, with its massive bell tower and attached cemetery, was the next step in the continuation of the program. Although generous in size, the church was simply designed and rather below the average height of other churches, no doubt also influenced by fears of future earthquakes. It contained two sacristies and was colonnaded on the west side. In the sanctuary are the remains of Payeras, one of the chief figures of Franciscan history in California.

The third step in the program was the restoration of the long, L-shaped building between the residence and the church, called the shops and quarters. In it were the apartments for the soldiers, civilian overseers, and their families. A guardroom for the general use of the soldiers, rooms for weaving, and the carpenter shop were also included. The west side of the building faced onto adobe-walled compounds, one of which was perhaps used as a corral for the horses of the military; the other used by the families for living and cooking purposes; the latter was indicated by the remains of a large oven and smaller fireplaces. A *corredor* was placed on both sides of this building. Plans are formulated for the reproduction of early looms, carpenter's equipment and products, as well as the furnishings and gear used by the soldiers. It promises to be one of the most educational exhibits of the monument.

Present plans contemplate restoration of three buildings of the Indian group, furnishings for the various rooms and shops, creation of museum facilities for the display of artifacts and interpretive material relating to the monument, and further repairs and restoration of the water system to permit its operation. To ensure protection and to eliminate all modern and incongruous developments, further acquisition of land is desired. The extent of the ultimate development is not entirely predictable at this time, but enthusiasts foresee for La Purísima Concepcion not merely a mausoleum of a vanished epoch, but a revived bit of the past; a tranquil little valley where time has been turned back and shall stand forever still at the most romantic and colorful period of California's history.

Ruins of the main Mission Building (residence) at La Purisima Mission as they appeared in 1934.

(National Park Service Photo.)



The residence building as restored by the Civilian Conservation Corps under National Park Service supervision in cooperation with California State Park authorities.

(Union Oil Company of California Photo.)

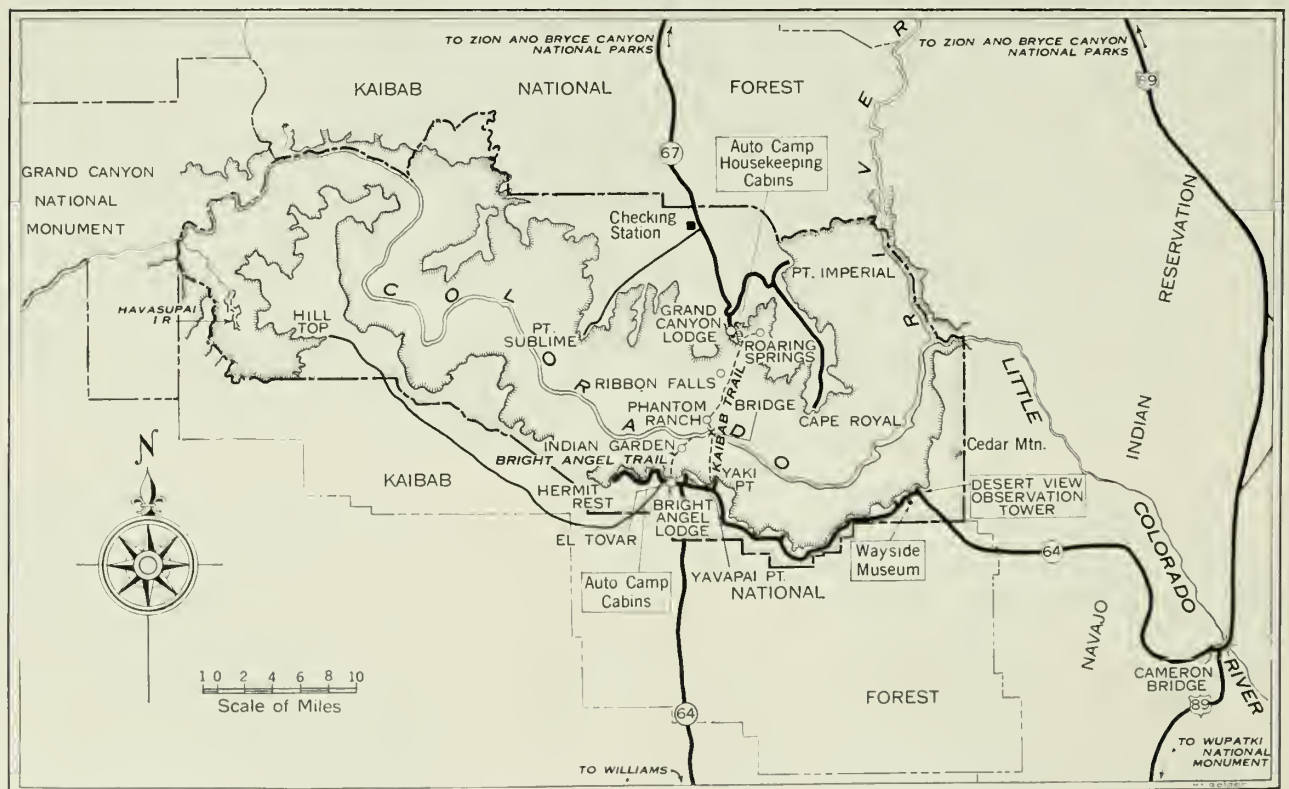


A CCC enrollee (left) at work on reproduction of furniture for the mission buildings. At right, reconstructed fountain in mission garden.





Plan for development of a small area for intensive use. Problems like these test the versatility of a park planner and administrator.
(Plan by W. Robert Jones, Iowa State College.)



Map indicating developed areas of Grand Canyon National Park, Arizona, illustrating planning scope of a large area.
(National Park Service map.)

ACADEMIC TRAINING FOR PARK PLANNING

Discussion of a Timely Subject by Two Leading Educators in This Field

I

By LAURIE D. COX

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WITHIN THE LAST YEAR OR TWO the idea of professional college training, aimed definitely at the park field, has come to attract considerable attention of park authorities of city, State, and Nation. My own interest in such a form of college training is of much longer standing. The direction of my professional interest in the park field began early. I had the good fortune as a college student in landscape architecture to come under the teaching of some of our greatest leaders in park design, F. L. Olmsted, Jr., Henry V. Hubbard, and Arthur A. Shurtliff, and my first professional engagement was handling the pioneer planning for a small western city's park system which had been outlined by Mr. Olmsted. Later, after several years of normal landscape practice, I became engaged as one of the executive heads of the park department in the largest city on the Pacific coast, having charge of planning and construction.

During the four years spent in this work, which included the redesign and reconstruction of practically every park in the city's park system, as an aid to my planning work I had the opportunity to visit and inspect the park development of nearly every important city of the United States and Canada, and, as a member of the Park Executives' Association, to become acquainted with a large number of park executives in such cities. As a result I became convinced of certain facts with respect to park planning. These were as follows:

First. Park design and park operation cannot be successfully kept separate. The reason for this is that a park plan is never static, and public requirements for recreation facilities are continually changing. As a result in the long run the men in charge of operation, whether for good or bad, must vitally effect if not entirely dominate park design.

Second. While the art of landscape architecture furnishes the general basis of park planning for effective results it must be supplemented by other arts and sciences and effectively synchronized during the design process with the detail practices of park operation and maintenance.

Third. There existed no school or college giving the type of training desirable for park executives and as a result our American park executive positions tended to be largely filled either by untrained men of business or political background or by trained men with engineering or horticultural background.

When a year or two later I was offered the opportunity to head a newly formed department of landscape engineer-

ing at the New York State College of Forestry at Syracuse University, I was considerably influenced in my decision to accept because I saw the opportunity to set up a form of college training for park men such as I had visualized.

During the subsequent 25 years I have not only been continuously engaged along park design and operation lines but I have been carrying on this form of college training. During that time I have had a considerable number of young men study under my direction. Approximately 150 of them are today in some form of active park work in various phases of city, county, State, or national park development in almost every State in the Union.

During all these years I have been constantly studying our program of training and checking it against my own park experience and the experience of our graduates who are active in the park field. The idea which I have had in developing our course of training at Syracuse is to train an all-round park man, such a man as I have sometimes facetiously called a "parker" just as we have an "engineer" or "forester."

It is my belief that the training should be so basic and fundamental in the park realm that men upon entering the park field may find their interest in any general phase of park work such as (1) design and construction, (2) promotion and extension, (3) administration and organization, and (4) operation and maintenance, or even in such highly specialized fields as recreational program, forest protection, wildlife administration, etc. It is my belief that a common type of basic park training for all men in any park organization will make for much higher efficiency in park planning and bring about much greater coordinated effort in park operation, than where a park organization has to make use of landscape architects, architects, engineers, foresters, scientists, business or legal executives, etc., each with a strong belief that his own field is the only vital park field and with little or no sympathy or appreciation of the importance of the other fields.

American parks of all kinds, city, county, State, and National, have their greatest weakness in bad planning. This result is not only because we have had such a small number of park areas where experienced landscape architects have had the opportunity to direct the planning, but fully as much because when capable landscape architects have directed the planning either one of two conditions has always existed. One is that the landscape architects themselves have been so lacking in appreciation of the demands of operation and maintenance that their plans did not stand up under heavy public use. The other is that under the direction of park operators with no appreciation of the vital factors of good planning the original plans have been allowed to deteriorate or get out of date with respect to population density and

recreational demands. Central Park in New York previous to the Moses regime is a classic example of this latter condition.

The only answer to this situation, if we are to improve American park planning, is proper training for all park executives, such training to be fundamentally based on a clear realization of the vital relation between planning and operation.

It is a firm conviction of mine that such training cannot be effectively secured in a regular professional college course covering any single field, be it landscape architecture, horticulture, engineering, or forestry, even though from all of these fields men have come from time to time to park work and have eventually contributed well to park planning.

In developing a form of purely park training it has seemed to me that there are a number of fields of study of nearly equal importance in which the student must be thoroughly trained. It is especially important that he develop a balanced viewpoint between the different fields without undue emphasis on any one. These are as follows:

Landscape design.

Engineering construction.

Architectural principles underlying building design.

Forestry, especially such phases as forest reproduction, ecology, protection against insects and disease, wildlife management, etc.

Ornamental horticulture, especially with respect to native flora.

Park and recreational theory and its historical development.

Recreational program.

Park operation and maintenance practice.

In the college program for training park men which we have developed during the last 25 years at the New York State College of Forestry, the first year is devoted to fundamental college work in science, mathematics, English, etc., and the other three years to the technical courses. The four years of normal college work is supplemented with a 10-weeks summer camp devoted to practical experience in forestry and ecology, surveying, woodcraft, etc. A second summer is devoted to practical experience in park work, when the men spend three months as active employees in park operation and maintenance in some organized park department. A few men of more than usual ability from each class are accepted for a fifth year of advanced work during which a thesis investigation in some phase of park activity is carried out. This supplements regular course work in advanced problems of park design. Likewise, a few men of practical park experience are accepted for two years of graduate work, these men having previously completed college training in landscape, forestry, or engineering.

The work of the students from the beginning of the technical courses in the second year is kept focused on the park objective. Active experts in the park and recreation fields are frequently brought to the college for lectures and round-table discussions, and the great majority of all projects in the

design and construction courses are based on active park and recreation problems.

It will of course be argued by some people that college graduates in landscape architecture, civil engineering, or forestry, or possibly even architecture can be readily formed into competent park men by being subjected to actual park experience over a number of years. This, is of course, true and there are numerous cases where such men have through long experience developed into first-class park executives. The same is true, of course, with respect to men with only a liberal arts college training, or even without college training at all, but with business or political background. Park work is, of course, no different from any other form of human activity in that experience is the greatest of all teachers. However I have followed the developments of many men in the park field whose background and training has been limited to a single profession such as landscape architecture, forestry, engineering, etc., and I have noted that in all cases their development was handicapped by their tendency to see the park field from the viewpoints of their single profession.

Given equal personality and mental ability I am very certain that the park man definitely trained as a park man will in the long run surpass the same man whose college training has been in any one professional field.

II

By PHILIP H. ELWOOD

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THE RAPID GROWTH OF INTEREST in recreation and sports and the tremendous development of recreational facilities of every kind throughout the world during recent years, as well as the general recognition by the public of their value and importance in modern life has opened a new field of service for men trained and experienced in this, a special type of planning, construction, and administration.

The requirements for this work, as might be expected, are becoming more exacting as the recognized standards become higher and more refined. Successful work in this highly specialized field naturally calls for a rather unusual kind of native ability as well as effective training. In fact, I wish to say at the beginning that the type and capacity of the individual is far more important than his training, vital as the latter is to future success.

Therefore, before I discuss education for park work, may I list briefly what I believe are a few of the characteristics a park man should have before he considers park and recreational work seriously or before he decides upon a training program toward that end.

Personal Qualifications

1. The park man needs a profound interest in humanity and in the improvement of living standards and environment. This should include an ardent "yecn" to help con-

serve our natural resources of all kinds, particularly our matchless scenic values.

2. To this should be added a certain understanding and love for beauty in its finest, broadest as well as in its more practical aspects.

3. To succeed in almost any professional capacity a good physique is essential. This naturally is even more important to the man contemplating active park and recreational work.

4. A creative mind, certain executive traits, as well as esthetic taste are essential.

These inherent qualities of mind and body may be considered the basic personal foundation upon which and with which we may build our successful park planner, builder, and administrator.

In the short space of this article I am considering only the major academic field of education of parkmen, not the many post-graduate, short, lecture, or reading courses, or other supplemental measures for bringing or keeping parkmen abreast of the times.

To the above group of inherent qualifications I would add the following requirements which are a part of the formal education of our park planner and recreation specialist. This is a short list of basic sciences and liberal arts with which our future park man must be familiar. These are:

The Essential Basic Science Foundation

1. Botany and ecology of both humans and plants, and their present and historical relationships is obviously important.

2. At least a general understanding of geology and geography, zoology, chemistry, and physics is fundamentally important to the educated man who is to live and work with physical elements in the great out of doors.

3. Equally important is a rather thorough knowledge of political science, government, economics, sociology, history, and literature, in order to make intelligent adjustments of public works to existing governmental machinery and to human needs and desires.

Thorough Technical Training Needed

Now we are ready to consider the applied arts and sciences or the professional curricula involved in this educational process. The sequence of courses is important, but many adjustments often will be necessary and desirable. From now on this discussion of necessity becomes more academic. Much of the basic work just noted may be taken in junior college or in a liberal or fine arts college preceding the professional work. Well directed outside reading would be helpful, but not to the point of excluding years of professional training in residence.

The professional or technical training is best obtained, of course, at a regularly established and recognized college or department of landscape architecture in close cooperation with departments of architecture, engineering, economics, and political science. What is included in the curricula of

the established schools is no doubt quite well known to most of the readers of this article, none the less a brief discussion may be helpful.

The park man of whom we are thinking, it should be remembered, is to be the park generalissimo, the man who knows not only parks, their design, construction, equipment, maintenance and administration and use, but a man among men, a cultured gentleman who can if need be step from the park into the city hall, the State house, a Federal department, a fine private home, or into a slum and take an important part in solving problems presented or found there. In other words I do not believe in such highly *specialized* training that our park man would be lost when confronted with any other problems of a public or private nature which a practising landscape architect, town or regional planner might be called upon to solve. To be able to meet such situations our candidate must be well fortified. His training cannot be narrow nor should it be too definitely oriented toward a specific type of employment or opportunity. The minimum educational requirements of the A. S. L. A. are not enough. At least 5 years of collegiate training is essential, with 3 full years of continuous development in design, including oral, written and graphic expression or presentation of plans, sketches and reports. Before and while this design technique or development is being perfected, there should be a well organized and carefully planned sequence in such subjects as freehand drawing, architecture, civil engineering and construction, and plans and planting design. All of these contributing elements or factors should be integrated with and incorporated into the design problems when practicable. As the student advances along various lines of expression, his ability to create should be constantly tested and his imagination stimulated in solving and presenting in any or all three media (oral, written, graphic) the results of this training. Gradually the problems throughout the college years become more difficult, intricate and involved. Practical limitations of topography, cost, scale and environment are applied with increasing intensity so that toward the end of the training period the student has encountered most of the major difficulties except the unpredictable human equation to be met in actual practice.

Speaking of the human element brings up for consideration the relations of our park planner to the other professions often vitally concerned with the building and operation of parks and recreational facilities. Naturally the earlier these associations begin the better. At certain universities and colleges there have been established collaborative or cooperative courses where the engineer, the economist, the architect, and the landscape architect all join in the study of a broad though specific collaborative problem, each contributing his part to the solution of the whole problem. These problem courses should be preceded or accompanied by lectures and discussions by competent, experienced authorities in each field or profession. This procedure gives the student a realistic impression of what part his

chosen field plays in the ensemble and in what specific ways he is dependent on others for the successful completion of a difficult assignment. Each technician may also find ways in which he can be helpful to the others, often avoiding needless and costly errors. Specific examples could be given where this relationship has been most helpful and economical, and the final results most satisfying. Examples of failure resulting from a lack of this helpful cooperation and collaboration in the past have been numerous. It has been found that recent graduates who have had this early baptism of inter-professional relationships on a man to man basis as undergraduates find themselves very much at home in the field or office working with other professions and technicians. These men already know the terms, the approach and the attitudes of their colleagues. So instead of bitterness, hard feelings or misunderstandings there is a tendency to minimize differences and make allowances for variations in backgrounds and training.

By being something of a diplomat our young park man is able better to bring others within the orbit of his influence, often reorienting the whole concept of the particular problem on the part of his associates. This is particularly important and relevant, may I repeat, to our park man's success.

Student Technicians

One of the finest things done in recent years toward initiating future park landscape architects into the field of practical park design, has been the selection by the National Park Service of a limited number of undergraduates from leading schools for summer work in the national parks and regional offices of the National Park Service. Metropolitan County and regional park departments might well do the same, sometimes very much to their advantage, as these alert young enthusiasts could be expected to contribute on various occasions a different point of view at least on many park problems. This practice tends to break down barriers and ease the transition between college and practice. When these student technicians return for their final years of training, their outlook and perspective have a new basic reality. This practice should be continued and extended not only by the National Park Service, but by State, county and metropolitan park boards.

Travel and Inspection

No one can or should consider himself qualified as a park planner or builder until he has seen with his own eyes at close range many of the best known examples of fine park work in this country. His observations should cover as wide a range of latitude, longitude and altitude as possible in order to attain a more cosmopolitan and comprehensive concept of the field. Naturally he should study intimately the operation and actual use of highly developed urban play and recreation areas. As many of these travel observations as possible should be made before graduation from college or university in order better to integrate his findings with his final design instruction. Upon graduation our

student or candidate for professional recognition would be partially cushioned for the shock always felt when reality and the supposedly cold world meets the young idealist as he emerges forth from the protection of academic walls.

Park planning the field of Landscape Architecture

Parks, park and parkway systems, their design and building is essentially and fundamentally the responsibility of the landscape architect. It is the one big field he can claim as his own. In spite of what I have said about collaboration with and the contributions of other techniques and professions the big over-all concept and the main responsibility for park design is and should be that of the landscape architect. It is obvious that the very best and most thorough training is needed to meet this challenge successfully.

Intricate Problems demand broad background

Often some of the most difficult park and recreational problems arise long before the drafting board stage is reached. Problems of selection and determination of site, acquisition of property, adjustments to meet the changing tides of population and land use, as well as fundamental economic and governmental consideration often must be solved in part at least before the area is actually incorporated into a park or park system. These naturally challenge the ability and the ingenuity and draw heavily on native ability as well as technical training, emphasizing the three fold need, native ability, broad scientific foundation and thorough and exacting professional training.

Management Demands Broad, Thorough Training

With our parks in America conceived, built and supervised by men of the caliber in mind, we need have little fear that our great scenic heritage will be squandered further or vulgarized even by a public insistent on over development too often motivated by temporary commercial returns. The landscape management of our great scenic and recreational resources for the greatest and permanent constructive use as well as the design of the development requires men with keen esthetic taste developed by thorough training in design. The caretakers for the great works of nature should be thoroughly trained men also. They should have *equally broad background and technical training*. Though they too must be familiar with the work of allied technicians, they should in no sense be considered masters in but one field, *their own*.

Educators have a great responsibility in this special field. The American people, whether in large or small urban centers or in the vast open spaces, deserve the very best in recreational facilities. High standards of design, construction, and operation already established by the National Park Service, the many State, county, and metropolitan park commissions must be maintained, and, where possible, raised. The professional schools can do this only with the best material available and the full cooperation of leading parkmen everywhere. It seems to me a mistake to entrust

the growth and development of large recreational projects in National or State parks or forests to men of mediocre ability and training. Even after the initial job of planning and construction is over there is serious need for intelligent and sympathetic guidance of every park and recreational area. Perhaps the very best guidance for this work would be

from the one who had most to do with the creation of the plan and its construction. He, better than anyone, knows the strong and weak points, and outstanding features of the area, and should be sensitive and responsive to the ebb and flow of use emphasis and the best means for meeting new demands without undue sacrifice of scenic values.

THE ROLE OF THE MUSEUM IN PUBLIC RECREATION

by ARTHUR C. PARKER, *Director, Rochester Museum of Arts and Sciences*

MUSEUMS IN AMERICA have undergone a rapid evolution. Remarkable changes have occurred in their attitude during the past 30 years, due in part to the fact that museum curators and administrators have been getting together in national conventions, and in part to the new awareness that museum workers have of their social responsibilities.

Not many years ago many of the foremost museums seemed content both to go their ways alone, patterning after some classic example of exhibiting things, and to insist that their duty was done when their specimens were on the shelves for the curious public to see. It was truly a Victorian attitude, in which there was a quiet dignity, a scholarly atmosphere, a patient resignation to the fact that the dear public did not appreciate nor could. The museum was for the man of science, the historian who delighted in memorabilia, the rare citizen who had the gift of noticing meticulous effort, curiosa and wonders.

At this period of development the museum of art presented great paintings and such sculptured works as it could obtain. Supplementing these objects were articles of more or less artistic merit from many parts of the world, exhibited as "examples" that visitors might have a basis of comparison. To show the utensils and the tools of our ancestors, personal articles and historical trophies seemed to have been the aim of historical museums. Getting a rather late start the museum of natural science had a distinct advantage in that the idea of interrelation, development from a common source and gradual change through the influence of heredity, natural selection, mutation and environment, gave the means of illustrating the known facts about these things. Thus slowly developed the thought that *ideas* might be exhibited in a museum. Once this concept became common thought it spelled the doom of museums interested in showing miscellaneous things for their own sake. Then came the research departments of museums.

Some of our greatest museums took root and flourished because they entered upon careers of discovery and research. Out of this came publications of value to students every-

where. Thus it seemed eminently proper for scientific surveys such as some of our notable geological, biological and archeological surveys, to operate under the aegis of a museum and to deposit their recoveries in it. It was so with the State Museum of New York, the National Museum, and several others.

Research played a leading role in the stimulation of museums of science and developed the thought that museums should be *useful* public agencies. It was noted with great satisfaction that the research publications of museums (as those of the National Museum, Peabody Museum of Harvard, the American Museum of Natural History and the British Museum, for example), were popular and served to advance the spread of useful knowledge.

A third stage of development came when museums began to enter into the field of education as active factors. This perhaps came through the extension programs of some of the larger museums, though in certain instances, a museum was created to foster the idea. Such a museum was the St. Louis School Museum whose plan was taken up by a large number of museums, the American Museum of Natural History having been perhaps the earliest in the field of natural science. The lending of lantern slides by "visual instruction departments" had much to do with broadening the concept of extension service in education. As some museums added to their stores of objects that might be lent either as single articles or selections especially devised to illustrate the subject of a classroom lesson, another idea began to unfold.

Teachers and clubs began in increasing numbers to ask for all the articles possible that would lend reality and substance to their studies. The museum worker went to the school, to the club, to the church, and by means of museum material assisted in building clearer judgments and more accurate concepts.

Out of this effort to help the teacher, the lecturer, and the preacher, came the idea of *participation*. Participation has become the fourth stage in the development of the museum as a public institution.

The accumulated wealth of the museum now became a source upon which the museum worker could draw for his implements. This wealth is divided into several forms; first, the knowledge and experience of the worker, himself; second, the records of museum; third, museum specimens; fourth, museum equipment. Museums, of which Rochester Museum of Arts and Sciences is an example, not only send out thousands of collections selected to meet the exact needs of teachers, study clubs, and church societies, but lend display equipment to community expositions and frequently make complete installations. Thus the museum with its wealth is taken to the "common man" and presented in such a manner that he can both understand and appreciate what he sees. Indeed, the aim is to exhibit usable ideas that have values that the man who looks may take away with him.

The long trail of the museum from the cloistered sanctum of the scholar or the rich collector, thus emerges from its seclusion to become a conscious agency of social usefulness, seeking to serve the every-day citizen, young and old. But even here there is evidence of growth, for from the realm of pure research the museum now seeks to participate in public recreation. The word *recreation* here is taken in its original sense as meaning re-creation, the building anew of the individual mind and body, thus providing an exhilarating sense of pleasure, the pleasure that comes with the consciousness that strength and health have been gained.

Perhaps the first field which museums entered when they sought to serve the recreational needs of the public, was that of organized study and recreational groups. In most instances these clubs meet at the museum, thus affording a near-at-hand body which might be influenced. At first it is noted that these clubs were interested in certain things that the museum had to present. Sometimes the club fostered a museum division. A good example is found in the numerous nature study clubs which sought a museum as a sponsor. Once the museum found that it could assist by way of lecture programs, laboratory facilities, and meeting halls, the way opened for the organization of other groups. Some of these were interested in geology, in birds, in plants, in animals, and in fishes. Thus in most of our progressive museums of natural science will be found numerous affiliated societies devoted to numerous subjects connected with nature. Like other groups these nature-study organizations, while serious in their intentions, are getting wholesome recreation. Indeed, there are instances in which a nature organization has established a museum of commanding importance. The Buffalo Society of Natural Sciences played a large part in establishing the Buffalo Museum of Science and still is the controlling organization, though public funds provide for the larger share of the expenses of this great institution.

Out of clubs interested primarily in gaining a first-hand knowledge of the things of nature as living forms came groups interested in the minutiae of nature's ways of life. Some of these clubs are interested in genetics and the study of heredity and make these subjects serve their recreational

needs. They are interested, they wish to be satisfied, they wish to participate in what to them is an exciting quest. Thus they join together to breed fruit flies, tropical fishes, plants, and rabbits. Their interest goes beyond the mere taxonomic and enters the field of pure experiment.

Some of these amateurs have made valuable discoveries and have produced new varieties of plants and fishes. It was an amateur breeder of rabbits who produced the new short-fur rabbit. Members of fish associations have produced new forms of aquatic plants and even hybrid and pure strain subspecies of tropical fishes. In experiments of this kind museums may not only furnish expert guidance and controls, but equipment and materials.

Some museums have long fostered and encouraged clubs of collectors. These are devoted to the collecting and study of such articles as postage stamps, coins, ceramics, arms and weapons, rare books, autographs, and book plates. These pursuits furnish a vast amount of genuine pleasure and a real outlet for certain deep acquisitive instincts. More than this they furnish the means for a great deal of personal ingenuity and self-expression, all of which is entirely aside from the knowledge gained. Museums help these clubs with quarters, with lectures by staff members, and with certain equipment. The museum may play a very definite part, but its vital concern is to let the club develop as an autonomous unit helping itself to the fullest, and returning the services of the museum by supporting its larger aims.

There is yet another field which some museums serve exceedingly well. It is in fostering community celebrations, recognition days, and local expositions. The celebration may be historical in nature in which case the museum staff may supply the text of the drama, the costumes for the participants, and information of value in keeping the presentation accurate. Museums need only to have staffs with the *will to serve* to make them invaluable in this field. Indeed, by pageant and drama, museums can bring about understandings and present truths that are far more effective than the unspoken words of specimens lying upon glass shelves. To make museum objectives vicariously talk and to clothe them with living ideas which the participant may express, are worthy aims, not at all inconsistent with the dignified mission of the institution.

School service divisions in some museums have had dramatic presentations which express certain things the museums are equipped to teach. These are more frequently given as children's programs, as in the instance of the "Treasure Chest" theater of the Rochester Museum of Arts and Sciences. If, then, the play can serve the needs of children, equally so it may serve the needs of adults, particularly if they can participate as the actors.

The president of one museum in a thriving city, indeed, hopes to make the new auditorium of his museum serve as a theater available to amateur groups and community players. The museum, he hopes, will have the right to insist upon and to provide accurate and authentic properties. It seems a long way from the laboratory of the

museum scientist to the footlights of the theater, but the way has only seemed long because the bridge of social responsibility has only recently been built for the museum. But museums have much to learn from both department store window and from the stage. From one they may learn how to display objects effectively; from the other how to dramatize ideas and give them life.

Special event days observed by communities, also, may be aided if not actually sponsored by the community museum. Arbor Day may be fittingly sponsored by a museum of natural history, as may Bird Day, American Indian Day, Home Coming Week, and a festival of all nations. In the field of history, the history museum not only may assist in developing suitable programs, but may lead tours to historic spots and assist in putting up inscribed boulders and bronze tablets. The fact is worth remembering that some of these observances and "days" originated in museums and with museum workers, and ever since museum men and women have taken leading parts in giving them a proper public hearing. A good example is American Indian Day which took origin with the archeologist of the State Museum at Albany in 1911, and is now sponsored by several of the larger museums in cooperation with the Indian societies of the region.

Assisting study and recreational clubs, some museums have gone to great lengths in sponsoring community hobby shows. Rochester Museum conducted one of the largest purely noncommercial shows of this type ever held, providing staff, labor, uniform equipment, prizes, and programs. Similar shows have been held in several other cities, some of them having commercial and advertising features. It is the recreational element, devoid of gainful features, that makes the "hobby show" most useful. It makes participants feel that it is their venture and that they are presenting things that they have made, have collected, or which they can do. The hobby show, indeed, is a form of glorified popularization of the interests fostered by the museum, and brought down to the horizon of the man and woman who like to do things, to accumulate and to venture into unknown fields.

Museums foster and encourage tours into the wider field from which the museum draws its data. Thus the museum interested in natural science may take groups to geological stations, to fossil beds, to forests, field, and to the haunts of birds, mammals, and fishes. Indeed, these nature jaunts sponsored by museums for their registered clubs have proven of great interest and recreational value. They provide a satisfaction for physical exercise, for the love of discovery, for becoming one with the great outdoors. Museums have clubs devoted primarily to walking, climbing and swimming. While these clubs are designed for pure exercise and health, their members pick up much of value and, moreover, gain a practical knowledge of how to live in the open with simple equipment. In Rochester, the Genesee Valley Hiking Club was organized in the city's museum, largely by members of the museum staff. The

same is true of the Allegany Trail Club, organized in the Buffalo Museum.

Out of the opportunity to do things in the public laboratories and club rooms of museums have come many associations and groups devoted to active forms of recreation, such as: taxidermy, carving, painting and drawing, modeling, puppetry, archery, photography, microscopy, astronomy, and telescope building. All these are given class rooms in which to meet, provided with lecturers, allowed to use museum specimens suitable for their purposes, and given a chance to hold expositions of their own.

While the constructive nature of the affiliated clubs in museums is educational, generally speaking, their real purpose is recreational, since they are leisure time organizations or devoted to coordinating the interests of persons having hobbies and other spare time activities, not commercial in nature. It is a significant thing that museums should thus lead in teaching the community how to play constructively and to get a zestful thrill out of adventuring along the many, winding roads that thread the landscape of knowledge and pleasure. It is indeed quite appropriate that the museum whose purpose is to make knowledge understandable by visible facts and to provide pleasure in being able to demonstrate the principles underlying these facts, should now enter into the utilization of these things by its public, by participating with it in its quests.

With the growth and spread of the idea of participating in the recreational needs of the public, museums can well afford to establish public laboratories for the amateur artist and modeler, the photographer, microscopist, astronomer, motion-picture maker, and craft worker. The museum will perhaps not be the only institution to make these provisions, but because it has the organization and the correct examples, it can serve as few others can. It may do this for another reason, this being that the museum is rapidly becoming a "people's university" to which all may come without an academic rating, and from which anyone may depart when he has had his satisfaction. Learning through play is a sound principle if the "play" is directed toward a constructive end. It is the most ancient way of learning and perhaps the best, since it makes learning a pleasurable experience and not a disciplinary requirement. Nor must it be thought that "playing" by the rules of the game does not provide discipline.

Learning and enjoying through the handling of museum specimens, recreation through the use of museum facilities, may seem a new principle, but it is actually a very old one. Formerly the curator and a few of his choice students kept these advantages to themselves. They felt that the presence of the public in a laboratory sanctum was a profanity. This attitude was perhaps a reasonable safeguard at a time when knowledge was the property of the few. Now, however, with universal education, with a specialization of interests, the public clamors for open doors to all avenues of knowledge. The world wants to know the answer to the question, "What good is it?" It wants to make itself

happier and more content with what it finds behind closed walls.

The progressive museum, therefore, not only opens its doors that all may see, but provides selected material that the public may borrow and handle. More than this the

museum, emerging from its smugness, now participates in the activities of its public, fosters amateur interests and becomes a foremost champion of all the better forms of recreation. This attitude marks a change of front and proves that the museum has become human.

MARKING THE ROCKY ROAD OF EDUCATION IN STATE PARKS

by HARRY S. LADD, *Regional Geologist, Region I, National Park Service*

AN EARNEST DESIRE to educate the general public has long characterized American life. In spite of this desire, however, many do not receive sufficient enlightenment even in those fields that are of especial interest to them. City dwellers are particularly handicapped in efforts to satisfy their curiosity regarding the out-of-doors. It is not surprising, therefore, that "Nature Appreciation" is recognized as one of the chief interests that bring people to parks, including State parks that are designed primarily for recreation. It seems entirely proper to place "Nature Appreciation" on a par with camping and water sports and under it to list geology and related branches of natural history. By this somewhat crooked path we reach the conclusion that geology is a form of recreation! Strange as it may seem to some, this conclusion can be defended.

It must be granted at the outset that geology is a formal science—a science endowed with many formidable words that are peculiarly its own. To the initiated, the geological road is rocky—figuratively as well as literally. Assuming that it is desirable to stimulate the interest of those who like the subject and to arouse the interest of those who know nothing of it, how shall we proceed? How shall we mark this "rocky road"?

Before attempting to enumerate and appraise the various methods of teaching geology in State parks, it might be well to make a brief survey of the subject matter. This is desirable for the sake of orientation and because there seems to be a general feeling that most of our outstanding geological features—mountains, canyons, caves, fossil beds, and glaciers—are enclosed safely within the boundaries of national parks and monuments. It is certainly true that many of our unique and most majestic geological exhibits are protected in this manner but others that are equally interesting, and some that are equally complicated, lie within the boundaries of State parks. All of the examples cited below are taken from the eastern part of the country, the area with which the writer is most familiar.

The power of running water, an important geological agent, can be appreciated by studying the falls at Niagara, the gorge of Letchworth, or narrow glens, such as Watkins, in New York State, or the wide canyons of Pickett Forest in Tennessee. Waves and currents have built the Hatteras bar and are eating into our parks at Edisto Beach and Hunting Island in South Carolina. Various phases of the work of glacial ice can be seen in dozens of our northern parks—glacial scour, for example, at Grass Point, glacial deposition in the drumlins of Fair Haven in New York. Among the lesser geological agents is ground water. Many of the results of its work, like Florida Caverns and the underground tunnel of the Chipola River, lie beneath the surface, but it has formed the sinkhole lakes of Gold Head Branch which also are found in Florida. It issues at the rate of 9,000,000 gallons per day to fill the beautiful pool of Georgia's Magnolia Spring and, in Alabama, it has excavated the spectacular "Natural Well" that pierces the upper part of Monte Sano Mountain.

The above-mentioned parks might be called physiographic because they illustrate the work of agents that modify the "face of the earth" and are responsible for its topographic form. In a second group we may place parks that contain examples of the various groups of rocks, of minerals and fossils. Rocks have been called the "primary documents of geology" and have been arranged into three main classes. The first of these includes *igneous rocks*, those that result from the solidification of liquid magmas or lavas. When cooled slowly the liquid forms coarse-grained rocks like the granites to be seen in Poundridge Reservation in New York. When cooled more rapidly (i. e. nearer the surface) the liquid forms fine-grained rocks like the hard trap in the Palisades on the Hudson. When chilled quickly by being poured out as a surface flow, the liquid may form an almost glassy rock like the rhyolite that caps Morrow Mountain in North Carolina. When blown out in explosive eruption the lava may form a fragmental mixture called

an agglomerate or volcanic breccia, examples of which may also be seen in Morrow Mountain State Park.

The second main class includes *sedimentary rocks*. They are composed of fragments of other rocks—fragments that have been transported by water, wind, or ice and later hardened into rock. Examples of such rocks are the conglomerates of High Point, New Jersey, the sandstones of Oak Mountain, Alabama, and the shales of Hungry Mother in Virginia.

The third main class, the *metamorphic rocks*, includes resistant types that may be formed from either of the first two classes under conditions of great heat and pressure. Into this category falls the “Carolina gneiss” that outcrops in many of our Piedmont parks from Virginia to Georgia. Into this group also fall the peculiar “augen gneiss” of Chewacla, Alabama, the quartzite and “flexible sandstone” of Pine Mountain, the slates of many New England parks.

Rocks are made up of minerals and the study of these minerals comprises a special branch of the science. Almost any park on the Piedmont Plateau, that area which lies between the Appalachian Mountains and the Coastal Plain, will yield a varied collection of minerals. Especially notable in this respect are Fairy Stone State Park in Virginia and Table Rock in South Carolina.

Many rocks contain the remains of animals and plants that inhabited the earth in ages past. A number of our northern parks, for example Gilbert Lake in New York, and some of our southern parks such as Monte Sano in Alabama, contain rich assemblages of shells that lived during an Ancient Era called the Paleozoic. From Westmoreland, in Virginia, come the teeth of numerous ancient sharks and the bones of an extinct whale that lived during the Cenozoic or Modern Era (this part of the “Modern Era”—the Miocene Period—ended 10–15 millions of years ago). Highlands Hammock, in Florida, has yielded the shell of a giant tortoise and other fossils. At Edisto Beach the waves are excavating one of the richest bone beds in the east. They have cast up bones and teeth of the Woolly Mammoth, Mastodon, Ground Sloth, Giant Beaver, Royal Bison, horses, elk, deer. Along with these land animals are bones of extinct whales, sea cows, and alligators. Most of these animals lived during the Ice Age but the teeth of still more ancient sharks also are included. Among the interesting finds from this undersea deposit are two tiny milk teeth from elephants—one from a mammoth, one from a mastodon.

In the parks of the Coastal Plain, and in other areas such as the Cumberland Plateau, the rock layers have been raised from the sea with little tilting. Elsewhere, as in the Pine Mountain district of Georgia, they have been arched into distinct folds. In still other places, such as Fort Mountain in Georgia and Pine Mountain in Kentucky, they have been elevated, folded, and shoved horizontally for varying distances, some of which exceed five miles. Areas like those last mentioned contain some of geology’s most impressive

exhibits, albeit they must be explained to be really appreciated.

In addition to strictly geological features such as those already mentioned, abandoned mines and furnaces of considerable interest as historical exhibits are contained in many of our parks.

In the foregoing sections various parks have been mentioned briefly because they contain features of geological interest. Many others could be added to the list, but it is clearly recognized that there are certain areas—notably those set aside because of their historical significance—where geology is definitely among the minor attractions. Differences of this kind between parks must be kept constantly in mind in planning any sort of geological presentation for the visiting public.

The ideal way to teach geology is a method inaugurated some years ago by one of our leading universities. The school purchased a railroad car and in it geology students spend the summer months touring the country with their professors. When the car has been shunted on a siding (sometimes near a national park) the professors lead the students into the field. There is a minimum of lecturing and a maximum of looking. Our park naturalists and guides use a similar system, but they labor under certain handicaps. They handle a diverse group with diverse interests and many in their audiences may be completely ignorant of the subject under discussion. The *personally conducted tour*, however, is certainly the most effective method of teaching geology and, under certain conditions, it is the only method that will serve. The visitors to a cave, for example, must be conducted through and they will desire to know how the cave was excavated, how its deposits were made, why there are various levels—and a host of other things. The beauty of Niagara Falls can be appreciated without guide service, but it becomes doubly interesting when one learns something of the complicated history of the gorge with its whirlpool and other unusual features.

Unfortunately, it is not possible to furnish naturalist or guide service in many of our State parks and some other method of calling attention to geological features must be adopted. There are a number of substitutes and it is our purpose now to consider some of them. Let it be said at the start that no single method is satisfactory for all parks. In certain parks where the geological story is interesting and yet not unduly complicated, it may be desirable to call attention to certain geological features by a limited number of unobtrusive signs or markers. As an example of such an area we may cite Pickett Forest in Tennessee. In this 11,000-acre reservation, an excellent system of trails leads the visitor to many unusual features—sandstone cliffs, natural bridges and tunnels, “rock houses,” waterfalls, and caverns. The “rock houses” and natural bridges are curious indeed and the visitor, be he young or old, certainly will wonder about their mode of formation. Possibly markers, such as the examples cited below, will help to satisfy his curiosity.

HARD, WELL-CEMENTED LAYERS OF SANDSTONE FORM THE FLOORS AND WALLS OF THESE ROCK HOUSES, EROSION HAVING REMOVED THE SOFTER MATERIALS. THE SAME PROCESSES, OPERATING ON A SMALLER SCALE, HAVE FORMED THE PITS IN THE WALLS. THE PINK COLORATION IS DUE TO THE PRESENCE OF IRON OXIDE.

NATURAL BRIDGE

AS EROSION SLOWLY DEEPENED AND LENGTHENED THE GORGE IT ENCOUNTERED SOFT, POORLY CEMENTED SANDSTONES BELOW THE TOP OF THE BLUFF AT THE HEAD OF THE GORGE. SUCH MATERIAL WAS EASILY WASHED AWAY, AND THE SURFACE ROCK WAS UNDERMINED. EVENTUALLY THE HEAD OF THE BLIND TUNNEL THUS FORMED COLLAPSED, LEAVING THE WELL-CEMENTED ROCK OF NATURAL BRIDGE TO SPAN THE GORGE.

These texts are written in the language of the layman, but it is probable that they are longer than is ordinarily desirable. Park visitors are curious, but many are not interested in long connected stories. A short provocative marker is more apt to prove successful than a longer text crammed with facts. A good example of a short marker is one submitted by one of our geologists for the palisades on the Hudson:

THESE COLUMNS
were made by
SHRINKAGE CRACKS
which formed as the
LAVA
cooled and hardened

In almost all parks there are numerous geological features that could be simply explained by short geological markers. Obviously, for esthetic reasons, it is undesirable to attempt to label all such features. In parks where even short lettered texts are undesirable or where the geological story is so complicated that it cannot be told in a few words, we may issue printed or mimeographed leaflets. If, in the text of such a leaflet, it is necessary to refer to numerous localities in various parts of the park, these localities can be given numbers—those in the text corresponding to small markers placed on or near the feature described. Leaflets and markers of this type are being prepared for Poundridge Reservation in New York and the New Jersey section of Palisades Interstate Park. This system can also be adopted in parks where vandalism is a problem.

In some parks, even though naturalist or guide service is available, it may prove desirable to develop special geologi-

cal exhibits. For example, if a *natural ledge of rock* showing well preserved fossils in place can be found or uncovered near a trail or road, it makes a first class exhibit worthy of special treatment, including protection. At observation stations it may prove desirable to place a geological map or relief model with movable pointer attachment. The Service is preparing such relief models for Fort Mountain in Georgia and Oak Mountain in Alabama. Both of these areas show complicated geological structure—folds and faults of various kinds—and the models are therefore being colored to show the distribution of the several rock formations. The sides of the model are also colored, indicating the probable distribution of the rock units underground. The Fort Mountain model is to be placed in the top of the stone observation tower, between the observer and the area covered by the model. A circular geological relief model has been prepared for High Point State Park in New Jersey. With High Point at the center this model shows all of the major geological features located within a radius of 50 miles. It brings out the relation between geology and topography, showing major features such as the Catskills, Highlands of the Hudson, Palisades, Delaware Water Gap, and a portion of the northern anthracite coal basin.

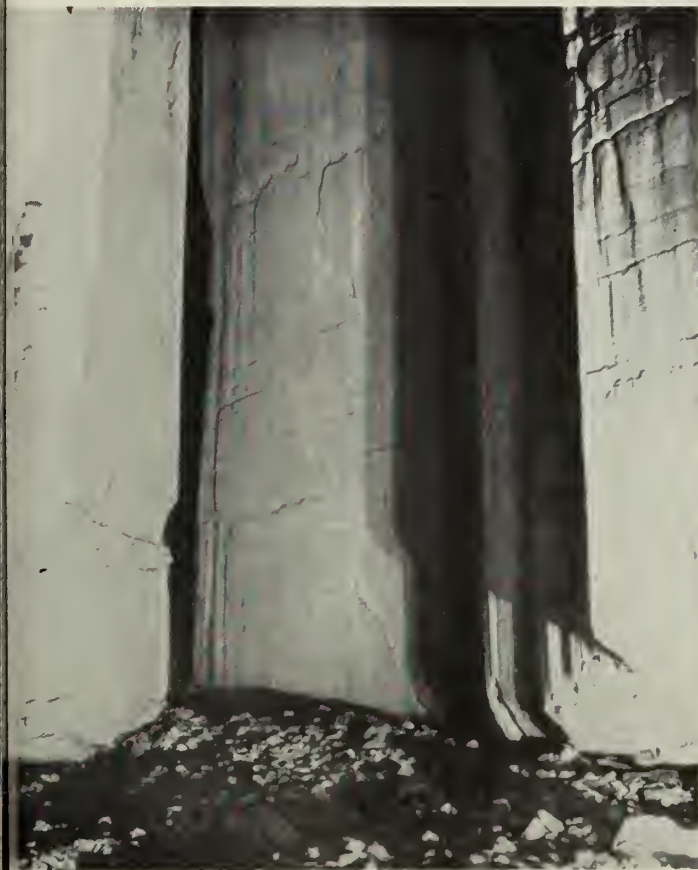
For Bedford Reservation in Ohio we have prepared a special roadside exhibit that is to be placed at an overlook on Bedford Boulevard. From this point may be seen glacial deposits left by the ice that once blanketed the area, several terraces that record stages in the development of the valley of Tinker's Creek and other geological features of considerable interest. All have been shown in a semidiagrammatic way on a large black and white drawing. This drawing, accompanied by a brief explanatory text, is to be placed in a small protected shelter that will stand between the observer and the scene.

For Gulf State Park in Alabama we have planned a series of block diagrams that will show various stages in the development of the present shore line and the fresh water lakes adjacent to it. These diagrams will be framed and hung in the lounge room of the beach building, a point from which one may see all of the important features shown in the drawings.

The spectacular cavern, known as the "Natural Well," that lies near the summit of Monte Sano Mountain in Alabama is a geological exhibit that will require special treatment. The "well" is a cylindrical hole nearly 200 feet deep and 25 to 40 feet in width, excavated in solid limestone. From the bottom of the main shaft a spiral opening leads downward into a high corridor whose ceiling lies nearly 100 feet above the floor. From the corridor a low crawlway leads to a pit some 20 feet deep. So far as we know there are no other caverns of this type in America, though very similar structures are developed in some of the limestone-and-volcanic islands of the Pacific. The "well" has been thoroughly explored and plans for development call for the installation of a circular staircase in the main shaft. It is believed that such a structure can be



Natural Bridge, Pickett Forest, Tennessee. This is the remnant of a thick, continuous rock layer carved by running water. This and other pictures on this page illustrate vital lessons to be learned by park visitors.



The Natural Well, Monte Sano State Park, Alabama, formed by the slow action of underground water.



Rock House, Pickett Forest, Tennessee, showing the disintegration of solid rock by percolating water, a stage in the slow process of the production of soil and leveling of the hills.



Upper left—Visitors to the Bear Mountain Trailside Museum, New York, who may fear the harmless water snake called the Moccasin enjoy this gadget and (center) what it reveals when the cord is pulled.

Upper right—Another amusing device in the same Museum is a mirror which has a story to tell.

(National Park Service Photo.)



Trailside and roadside information places have long been a feature of the educational programs in the national parks. This is the Obsidian Cliff Shrine in Yellowstone National Park, Wyoming.

(National Park Service Photo.)

Trailside Museum in the Cleveland (Ohio) Metropolitan Parks. Benches are provided for outdoor lectures.

(National Park Service Photo.)



installed without destroying entirely the natural appearance of the cavern. A geological exhibit explaining the manner in which the cave was formed is to be set up at a point near the opening.

In some State parks, field exhibits should be supplemented by a museum. In certain areas a museum for geological material is absolutely essential. At Edisto Beach, for example, a permanent building is urgently needed to replace the temporary structure that now houses the remarkable collection of bones and teeth cast up by the waves of the Atlantic. The gigantic fossil tortoise found at Highlands Hammock State park in Florida has been restored and will be exhibited in a glass case in the Combination Building.

TRAILSIDE MUSEUMS AND NATURE TRAILS IN PARKS

by WILLIAM H. CARR, *Assistant Curator of Education, American Museum of Natural History*

IN RECENT YEARS, the National Park Service has accomplished more in the field of nature interpretation than possibly any other organization in America. Various State parks throughout the country have also entered this field. Parks which have given the most attention to the policy of acquainting visitors with the country through which they travel have already received tangible dividends.

State park officials realize that large and small recreational and semiwilderness areas must contain more than bathing beaches and picnic grounds. As a result, citizens are learning more about the out-of-doors than ever before in the history of our land. Needless to say, both wildlife and plant conservation programs are receiving a tremendous amount of attention in this connection. This advance, in providing worth-while and increasingly sought-after information, presents one of the most interesting problems wherein the future of park use is concerned.

The out-of-door museum of natural history, whether it be large or small, has for its main purpose the collection of information in a central spot where it may be had for the looking or for the asking. This function of an information center for nature knowledge is most important both from the standpoint of the giver and of the receiver. There is no more enjoyable or worth-while task than that of giving correct knowledge to those who earnestly seek it. This however, is but a part of the work. Other branches of service have to do with inculcating in people an interest in the world about them, in giving inspiration to those who need it, yet somehow, do not look for it, and in encouraging the public to look forward to an added joy in their outings, the joy of knowing more of nature and thus of appreciating her creations. All in all, "trailside museums" are playing

Eventually, if additional fossils are uncovered, it will find a place in a park museum.

Nature trails of the type developed by William H. Carr at Bear Mountain in New York and now being adopted in recreational areas in other States are mentioned only briefly here, since this subject is presented by Mr. Carr himself in another article in this issue of the yearbook. In our opinion nature trails of this type form one of the finest methods of teaching geology and related subjects in areas that are primarily recreational. Interesting geological trails of this kind can be developed in most State parks—even in those that do not have impressive or spectacular geological features.

an outstanding part in the nature-teaching program particularly, and in the educational life of the country in general.

Some of the other objectives of out-of-door museums are those of serving as nature headquarters to various camps, or organized groups in the vicinity, of providing nature guides, lecturers, and loan material for persons or for recreational units requesting them. A nature news service, together with regular natural history publications, is still another phase of the park museum's activities. These and many other types of efforts are the principal functions of the museum in the open.

Nature trails serve the people and the parks in much the same way as do out-of-door museums. Here, instead of specimens indoors, natural objects, such as trees, flowers, rocks and ferns, are labeled and otherwise taken advantage of exactly where they grow. Live animals too are illustrated along the trail. Perhaps this brief label at the starting point of one nature trail will tell more exactly the true aim. It reads:

SIGNS ALONG THE TRAIL

How many of us are able to read "unaided," the signs of Nature? Let the guiding labels take the place of a Naturalist friend who has an interesting story to tell you as you follow the trail.

In brief, then, this is the object of a nature trail, to tell some of the nature story where it may very well be told—in the open, along the trail. Whenever possible these paths should be a part of a general trail system surrounding the trailside museum. The two projects, working as one unit, form an almost ideal combination for teaching. The trails lead to the museum and the museum, in turn, sends the

people back to the trails for more information. The museum should be the focus point of all of the trails, an informational clearing house at the service of every trail visitor.

The possibilities and scope of the nature trail and museum are almost without limit as to the ultimate progress that may be made in new and better methods of nature presentation.

The direct and evident values of nature museums and of trails have been clearly demonstrated in many parts of the country during the past 20 years. The establishment of this system of out-of-door education is an accepted fact. The period of trial is over.

Nature trails and trailside museums provide both an easily understood idea and an interesting mental and physical activity to people who come under the spell. It is a spell that has to do with a simple, yet orderly method of teaching combined with an absolutely natural atmosphere and a voluntary desire to learn, on the part of those who walk the trails. A casual interest very often develops a keen desire to know more. There is not, or should not be, the slightest suggestion of compulsion. Nature interests are shared by means of open device. Nothing is truly hidden. Of those who come merely for a good time (and the great majority of people come just for this purpose) many find themselves learning something and having a good time in the bargain. Informal teaching with a direct personal appeal is usually successful in accomplishing its desired end. The ideal trailside museum and nature trails are decidedly informal.

The system of silent yet eloquent nature guiding, provided by signs along the trail, enables large groups to learn without need of a human instructor. Thus teachers and general leaders need refer but seldom to the spoken word as their group wanders along. However, places should be provided where groups may rest and listen to special instruction. The facilities for learning, provided by trailside centers, are excellent locations for work carried on by nature schools.

The most desirable places for the location of nature museums and trails are to be found in State and municipal parks that are not too far away from cities. Wayside museums along the sides of State and national highways have proved of much educational value and importance. Wherever people in large numbers come in contact with nature, there should be a means provided for them to gain a more complete understanding of the natural objects with which they may become acquainted.

Trailside museums and nature trails may be financially maintained by the supporting agencies of parks. Scientific and amateur organizations, such as museums of nature history, nature clubs, Boy and Girl Scouts groups, or various school, university, or city maintenance groups, are, in many instances, equipped to care for the organization of a trailside museum and trail provided the park officials will cooperate and will seek "outside" aid.

Needless to say, the value received for the effort and moneys expended will amply repay the person or groups

who underwrite and supervise such an educational program. Institutional prestige is not one of the least important of the advantages in this connection. The money needed is very small in comparison to the amount of good that is enjoyed by appreciative people. Many trail units operate for the summer months on budgets of less than \$500.

When the importance of nature trails and of nature museums is sufficiently explained to the governing bodies of various institutions that might very logically support them, then and usually only then, are funds forthcoming. It is far better to commence in a small way than to lose heart because of a lack of financial support to fulfill all of one's dreams instantly.

One of the best ways of proving the value of the museum and trail systems is to make a beginning with whatever equipment one may get together. If the results of the work are worth while then, indeed, will one have a foundation from which to build. One will be able to point to the success that has attended the budding efforts and be in a far better position to ask for more support. We know of quite a successful museum that was started and maintained in a 9 by 9 canvas tent. Yes, and the curator of this museum slept in the tent too! We might add that the tent has now given way to one of the best equipped and most useful camp museums to be found anywhere. Perhaps, after all, humble beginnings are the best.

Proper publicity is highly desirable, for almost any public nature undertaking. Local newspapers are only too glad to give space to projects that are enjoyed by the people. This publicity should be of real educational value to be most worth while. News letters also help in enlightening others of your enterprise. One small boy scout museum that had its inception in a State park was enabled to secure considerable publicity in several well known papers simply because, among the other objects in the collections, was a tame skunk. This skunk was pictured and described far and wide. Probably no other individual skunk ever advertised itself in any more desirable a method. Today, although the skunk is gone, the museum that he helped on its way is still in operation, now supported by the park. Incidentally, many people learned to have a much better opinion of a "wood pussy" than they had previously entertained!

In connection with publicity, one should not lose sight of the fact that neighborhood schools, clubs, religious groups, scout troops and camping centers will be interested in the work. These groups should be informed of trail and museum ideas and their aid enlisted. Those who help will be the ones who will benefit principally in the development. Rather than grind one's own axe, one will discover that it is far better to give out axes for others to grind, wherein a park nature museum is concerned.

The general rules, usually applied to qualified leaders of almost any type of organized endeavor, also apply to nature leaders. In many communities there are men and women as well as older boys and girls, who are available for nature-

leadership when the opportunity is presented to them. One of the most far reaching phases of the traiside museum and of the nature trails is their great value in the development of competent nature directors.

Some of the human traits that should be possessed by every true nature counselor or park nature man (all nature teachers are counselors!) are:

1. An unselfish devotion to the cause in which they are enlisted, that will permit of long hours of interested, well directed, and happy work.

2. Real enthusiasm, of a contagious sort, that does not merely flare up, only to die, but rather grows warmer as time goes on.

3. The possession of accurate nature knowledge to the extent of being able to impart it to others. Sometimes a "born naturalist" who has devoted the greater part of his days in learning by experience to appreciate the works of nature, is better qualified for the position than many a college trained person who can only recite what he has learned from books and from lectures. "Cabinet naturalists," as a rule, have pale skins. A college education, combined with true and voluntary field experience, will provide an excellent background for any nature leader, although it is not always to be preferred.

A little knowledge, properly brought home to the museum visitor, is far better than a miscellaneous collection of information improperly presented. The average public is interested, not so much in the extraordinary, but rather in the everyday commonplace events in natural history.

They would rather know what an animal eats than what happens to the food once it has passed from sight. This in itself, of course, is no reason why the visitor should not know something of digestive processes provided the facts are presented in a digestible manner. The most obvious phases of nature are the ones about which people, as a rule, know the least. This fact should not be lost sight of.

4. A nature leader should learn to "know people." He or she should study, above all, the persons who are benefitted by the work performed. A sympathetic understanding of the public as well as of nature facts should go hand in hand.

5. Honesty, sincerity, and an ability to say, "I do not know" are also prerequisites for a good nature counselor or leader—also a sense of humor!

Many accounts of traiside operation have been published by the Department of the Interior, The American Museum of Natural History, American Association of Museums and the National Audubon Society. M. L. Hutton, director of the Iowa State Conservation Commission, published a splendid account of natural history undertakings in the parks of his State in the *1938 Yearbook*. Information on trail and museum building may be obtained from the above sources and also from the Cleveland Museum of Natural History, the Garden Club of America and many other organizations and societies which actively support nature education programs. Park administrators who have not as yet established traiside units in their regions would do well to secure publications from some of the above-mentioned institutions and then to, "go thou and do likewise."

PREDATION AND PREDACIOUS ANIMALS OF THE NATIONAL PARKS

by **OLAUS J. MURIE**, *Bureau of Biological Survey*, and **ADOLPH MURIE**, *National Park Service*

EXTENSIVE SETTLEMENT of our country has restricted the numbers and ranges of the larger animals, not only of carnivores, as the mountain lion and the wolf, but also of herbivores, as the buffalo and elk. In ways not foreseen man's interests have often been affected by both game species and predators, not to mention rodents and insects.

It may be of interest to review briefly the place of predators in Nature, using the term in the broadest sense. On various occasions in the course of evolution new groups of animal forms arose, became diversified, and filled available ecological niches. For instance, when the reptiles predominated on the earth they branched in numerous directions, some taking to the air, others to the water, some becoming vegetarian, and still others carnivorous, feeding on other reptiles and probably amphibians.

Similarly, when the birds developed, although mostly

characterized by the power of flight, they diverged in other ways, becoming aquatic, arboreal, or terrestrial, with respect to habitat, and vegetarian or carnivorous, in food habits.

Again, when the mammals appeared they too followed the adaptive pattern and became aquatic, terrestrial, fossorial, or arboreal, some, such as the bats, even becoming able to fly; and in feeding habits they became vegetarians, insectivores, carnivores, or omnivores with numerous minor specializations.

A singular occurrence took place in the Australian region, where the primitive marsupial line, apparently the only one available there, itself became diversified so as to produce pseudo-carnivores and other forms corresponding to the groups developed by mammals in general.

This "adaptive radiation" is the basic urge that should be

kept in mind when considering natural interrelationships of animal forms. Adjustment all along the line has tended toward acceptance of ecological opportunities. Despite apparent adaptation in their time some groups have dropped out, but many others have persisted. The lowly rodents, preyed upon by so many flesh eaters, furred and feathered, as well as by reptiles, have responded with a high reproductive rate and have succeeded. Indeed, upon the success of the species preyed upon depends that of the predator. When snowshoe rabbits die off in the north woods the lynx suffers. When mice fail in the Arctic the white fox feels the effect. There are constant fluctuations in animal populations due to causes but little understood. But with fluctuations, adjustments, and continual changes, nevertheless a balance tends to develop.

In the earlier stages of contact of the white man with American animal life, no thought was given to the ecological aspects of predation. If predators interfered with human interest, efforts were made to remove them. More recently, with a dwindling of animal numbers and with broadening of man's viewpoints and interests more attention has been given to the complex interactions of animal forms. In mosquito suppression, for example, attention is being directed more and more to biological controls, and students of predation are now concentrating on the ecology of the prey species, environmental factors favoring populations, ecological hazards, breeding potentials, food resources, and diseases, all of which are important.

Recently the Ecological Society of America published a symposium on "Insect Populations" (Ecological Monographs, vol. 9, no. 3, 1939) in which various authors discussed methods of approach to the study. Much attention was given to fluctuations and their causes and techniques for obtaining pertinent data. While in many respects mammals and birds are not comparable to insects, a study of their populations along somewhat similar lines may be profitable. "Outbreaks" as in insects may indeed occur among rodents, among the ptarmigans of the north, and in a sense among big-game species. And they may be caused, as with insects, by "relaxation of environmental resistance."

In any case we may come to a better understanding of the predation problem by focusing attention on the behavior of populations—prey and predator alike.

Human objectives likewise must be considered. Sometimes these are clear cut, as when an owner of domestic sheep, regardless of ecological considerations, seeks relief from coyote or mountain lion predation. In other cases they are confused by diverse desires of different groups and lack of precise information. What, for instance, is the end sought in control of the eagle, the duck hawk, the bear, or the coyote? The bear is a predator in some cases, sharing with the coyote an occasional taste for fawn. But the bear is also a game animal, sought by sportsmen. The mink and otter are predators, but also important fur animals. The duck hawk preys on birds but is becoming scarce and is admired by many for its remarkable flying

and hunting skill, which make it the hawk most prized by falconers. It is difficult to permit the wolf to remain in areas occupied by man, and this animal is all but extirpated from the United States, yet by many it is considered a worthy member of our fauna. The mountain lion will kill deer, yet by some hunters it is considered superior as a game animal. It is admired and its preservation urged by many other people.

Thus, objectives and interests are so diverse that it is difficult to unite them in a single, coherent program. Yet we are making progress, and continued research will further clear the way. Some of our areas are falling naturally into the uses appropriate to local conditions and desires. Predator control is practiced to protect livestock and in certain localities to increase the game supply, but in others predators are tolerated. Certain sanctuaries, though established to preserve a primary species such as the antelope or bighorn sheep, furnish habitat also for other animals, including both mammal and bird predators. Our national parks are dedicated in part to the preservation of samples of the native American fauna and in these areas there is opportunity to keep forms that do not fit into the fauna desired in other localities.

Even in national parks, however, the problem is not always simple. Animals, especially the larger, and the migratory species, do not remain entirely within the boundaries of the parks. Among them, the wolverine, fisher, and other rare species wander outside and are trapped or shot, with the result that they are eventually "drained" out of the sanctuary.

In Yellowstone National Park, a few years ago at least, one or two wolverines were known to be present in the southeastern portion, wandering in and out over the boundary. One trapper with whom we were acquainted had tried without success to capture a wolverine just south of the park. He was determined to catch it the following season, and possibly did. Whether there are any left in the park today is doubtful.

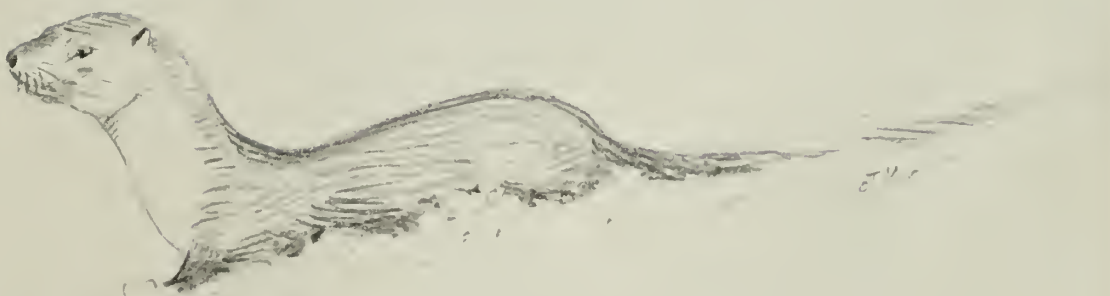
The grizzly bear is still holding its own in the Yellowstone, though some are killed regularly outside the boundaries of the park. Undoubtedly the protected bear population serves as a center of dispersal to supply surrounding territory with huntable game. This is accomplished, however, at the expense of semidomestication. Were it not for the attractive garbage heaps, what would happen to this grizzly bear nucleus? Would it, too, be drained out of the sanctuary and dwindle away?

This is a serious limitation on our efforts to protect threatened but wide-ranging species within designated boundaries. Eagles, for example, may be protected in a given sanctuary or national park, but migration may remove the birds to an area where there is no protection.

With big game it is often true that the sanctuary, refuge, or park furnishes only summer range, or may include only limited winter range. Outside, the original winter range may have been so greatly restricted or utilized for other



Wolverine. (*Drawn by Olaus J. Murie.*)



The Playful Otter Feeds on Fish, but is a Valuable Fur Animal. (*Drawn by Olaus J. Murie.*)



Much Remains to be Learned about
the Intimate Habits of the Wolverine
and the Species is Dwindling Fast.

(Drawn by Olaus J. Murie.)



The Coyote, Probably the Most In-
telligent of our Carnivora, Challenges
the Scientist to Interpret Correctly
its Role in the Fauna.

(Drawn by Olaus J. Murie.)

purposes that migration may not wholly settle the food problem.

How then, some will say, can we expect to preserve the original fauna, or samples of original Nature, in our national parks if game species, nongame birds, and predatory animals alike cannot be retained within designated boundaries? What is the use of trying?

But we need not consider it entirely hopeless. It is true, we have lost a few of the animals of some of the protected areas. The grizzly is gone from most of them in the Western States, the mountain lion is no longer present in some, the fisher has become generally scarce or extirpated, the white-tailed deer has died out in the Yellowstone, the California condor has disappeared from areas, now parks, where no doubt it occurred at one time. Nevertheless, there remain here and there surprisingly good samples of natural conditions, where with care the vegetation, water areas, and general environment can be preserved, and most of the original fauna is present. We must do our utmost with what we have, for preserving representatives of our native wildlife is a high objective. The passenger pigeon is gone from the American scene, so is the Labrador duck, and only recently the last heath-hen disappeared. Those regrettable losses should heighten, not lessen, our desire and duty to save what remains. We are restoring certain game species to their "hereditary ranges" and it may be possible to restore nongame species, including some predators, in areas such as the national parks.

There are factors favorable to the protection of predators. For instance in some areas adjacent to a park, sanctuary, or wilderness area considerable tolerance for predatory species has developed. While hunting and trapping continues there, the drain is not so great as formerly and a larger population remains within the protected area. Yet the predator population is kept down to moderate numbers, thus benefiting areas where the animals are not wanted.

All efforts to preserve primitive conditions must rest on cooperation. In recent years there has been increased appreciation of unspoiled nature and a widespread awakening of a desire for restoring natural conditions. Witness the efforts of international organizations for the preservation

of wildlife and of primitive conditions; as well as increasing interest in our own country in retaining various birds and animals, including predatory species, in the American fauna.

The July-August 1939 number of *Conservation* contains an interesting account of national parks of the Belgian Congo that describes the purpose and general character of areas dedicated to the preservation of natural conditions. It points out that an environmental change unfavorable to some species, as the antelope, and favorable to others, as the elephant and buffalo, "must be regarded as a natural phenomenon." The reservation of these natural areas in the Congo is only an example of a world-wide awakening of interest in the preservation of natural conditions that are instructive, significant, and appealing to our esthetic sense in a variety of ways.

There are difficulties to be sure. In some areas agricultural and livestock pursuits must be safeguarded, but we have Federal agencies well equipped to handle the problem, whether it involves birds, mammals, or insects. Even in sanctuaries, including parks, difficulties will arise.

But in the meantime research continues and new viewpoints arise. Recent information indicates that certain game problems, for instance, do not depend on predatory animals so much as they do upon range forage conditions. Factors that may be involved include buffer species, carrion (involving both raptorial and carnivores), population cycles, diseases, parasites, and natural control in general. By taking advantage of data now on hand or obtainable, and focusing attention on the animal population of both predator and prey species, by continuing efforts to understand the needs of animals, keeping in mind the entire ecological background, research can do much to solve the predacious animal problem.

Interest in our animal life is varied and often specialized, giving rise to preferences and conflicts, but it should be possible, in the light of research, to adjust differences to protect legitimate interests, and, through better understanding of ecological processes, to provide more successfully for our game species and at the same time prevent the extinction of any species.

NATURE'S BALANCES IN PARKS AND ELSEWHERE

by RICHARD LIEBER

ON THE LINTEL of the gatehouse to our Indiana Dunes State Park you may read:

*All things by immortal power,
Near and far,
Hiddenly to each other, connected are,
That thou canst not stir a flower
Without the troubling of a star.*

These supernal lines from Francis Thompson's "Hounds of Heaven" appear in the poem quite apropos of nothing to make their amazing statement.

For a long time we did not realize those interconnecting ramifications of all natural objects of which the poet speaks. Poets have always told us of weird and hidden things but we, being practical minded folks, have brushed aside their revelations and proceeded in our curious way of trial and error. Each for himself just as though there was no connection at all, and unmindful that, "All Nature is but art unknown to thee; all chance direction which thou canst not see."

So much for the poets. Yet, so far as we ourselves are concerned, a good deal of much needed enlightenment after all has come over us by way of gradual perception of Nature's diverse devices to keep its balances within as well as between the organic and the inorganic world.

A good example of what I mean to convey is the beginning of forest conservation in the seventies of last century and in the same decade the inception of our national parks. In that day the coherence of the two endeavors, nay their identity, was not realized. How could there be a semblance between, let alone an identity of, the two objects; the one designed to protect and properly to utilize a great material resource, the other to preserve for the enjoyment of the people an unexampled wonderland in its pristine glory?

We have come a long way since 1872. Today we not only understand the interlocking character of all natural resources, but in their treatment and use progressively discover the interoperation of social, economic and spiritual forces. Parks have definitely become an important part of the broad scheme of the conservation of our natural resources. Scenery, we have come to realize, is one of our common possessions not only of recreational and historical importance but just as eminently of economic value.

Separately considered, this common possession of lands and waters, a natural resource of the first order, calls for systematic management to safeguard its integrity and at the same time to make the best use of the property.

Referring only to these resources, Lands and Waters, how are we getting on in our battle with facts and fancies? What are we doing to check our well-known misconduct in

nature? Do we realize the error of our former ways and correct them, or are we merely temporizing by "pouring fresh wine into old wine skins?"

At this juncture I feel highly tempted to launch a diatribe on social and moral obliquity as proven by the howling waste of all our natural resources and regard with "a countenance more in sorrow than in anger" the general cussedness of man who through his ruthless exploitation and interference with the biological economy of nature, verily is sawing off the supporting limb on which he sits.

Life today is not a blissfully haphazard but a sternly organized effort to gain a livelihood. It is so adjusted that our being does not depend for comfort and happiness on harmony with nature. Our entire industrial system is based on that premise.

Aeons ago man gave up living passively with nature and chose the alternative of opposing her whenever he found himself out of harmony with her ways. This occurred the moment that man differentiated between noneconomic and economic values. Of the things which man wants, there was perhaps always a scarcity. Those which were superabundant had no economic value for him. With the increase of knowledge came not only a transformation of noneconomic to economic wealth, but likewise an indefinite expansion of human wants. Greater ease of production was followed by a rapid increase of density of population and reversely by an equally rapid increase in scarcity of the natural resources involved.

The road once taken had to be followed out with inexorable certainty. It would be wrong to say that not living harmoniously with nature in turn led man away from her. Not at all. How could the earthborn do that? He merely accepted the natural condition when in accord, and fought it when opposed. He wrested from her hidden forces and great wealth and applied them to his convenient uses. In his wasteful methods he made the poor excuse that nature herself is prodigal in overproduction and in attending waste; but in its last essence, nature proves the perfect economy of her household by leaving nothing to waste; all is used up to the last vestige in the eternal scheme of things. That is an astronomical distance from even the most highly systematized industry. Neither water, nor air, nor the soil is charged with refuse in the natural processes.

It's a long way from the stone ax to the trip hammer; from simplicity to complexity. On this march of progress man has complicated his situation enormously and created a chain of obdurate conflicts with nature, with his fellow man and lastly with himself.

Natural abundance in itself was of no economic value to him—at least not until advancing science pointed to its

use and exploitation. Property—damned and coveted alike—is not claimed in noneconomic units; it must be something of restricted quality or quantity which someone else does likewise covet.

The “things that are wanted” are the trophy in this fight against nature. They produce comfort, wealth, position, and power. Based on the greed of the individual they in turn produce greed in others and give rise to the conflicts pointed to.

The function of statesmen, lawyers, teachers, merchants, manufacturers, and even the clergy is based on this antagonism of interest caused by scarcity of economic values. In like manner the transformation of noneconomic wealth to economic and the use of new inventions involves constant social adjustment, legal adjudication and not infrequently a revision of moral concepts. (The automobile, f. i.) The economic problem remains basic; social and moral problems are evolvments.

Seven-mile-league booted technology is 'way ahead of a worried financial support column on which it must rest for subsistence while, far back in the rear the forces of law, customs, and standards of living are desperately struggling to follow the mad pace of our own scientific and technological creatures.

This maze we call modern life is seemingly so inextricable that guides wise and foolish, professional and amateur, selfish and altruistic in conflicting exhortation add to the din of present confusion.

Mr. Coue's homily of yesteryear, “Every day in every way,” seems to have gone into reverse. Pastor Wagner's homely advice of the “Simple Life” at the time was greeted with rousing cheers; it was immediately proposed that it should be tried on the poorer classes first. Accepting the parable of the needle's eye and the camel it was apparently taken for granted that a spiritual minimization of the ruminant mammal and a corresponding scientific dilation of the aciculate implement, resembling in size a glorified barn door would offer an easy solution to an age-old problem.

The question seems pertinent: Who is right? Man or Nature? Two views are possible to defend, albeit both lead toward extremes. The extremes are passive submission and stoicism on the one hand; greed, Sybaritism and extinction on the other. Yet, either extreme will hardly be reached. The former is incompatible with the high social position attained, the latter has its inherent checks in the economic adjustments, chiefly through economic scarcity of given resource units.

As always, the safe course seems to lie in the middle. “Down with war, but up with production” has a purely vocal worth as long as spiritual values remain subservient to material ones.

Ethics and even morals have changed with a changing economic basis. Will it not be possible to accentuate the spiritual, the altruistic by approximating an exact economic justice and liberty, just as the great and lofty minds of the

18th century reached a new goal of civil and political justice and liberty? When that happy day comes it will not be the millenium as some think but just one more *étape* on the road to Damascus. On that day we will know the wickedness the foolishness and the vacuity of our misconduct in nature.

This is a consummation devoutly to be wished. Things of course do not improve by acceptance of a general truth presented in a resolution unanimously adopted and instantly forgotten. Improvement will come as it always does by earnest workers working their own field mindful of the responsibility they have towards the common good.

Our parks, I have said, are part of the conservation movement. They are *our* field to work. It is here we can show by earnest application to the task what conservation really means for the good of all of us. Parks, like the forests, make a spectacular appeal to the imagination of our people.

Parks are the show windows of all conservation. Therefore we must know that to preserve these parks for the time to come and be of use to unborn generations we, in our time, must see to it that preservation take precedence over use.

It seems logical to simplify their use as we now know it and resist the introduction of still further modes of service. Especially to be watched are those so-called recreational uses which, being proper and even highly desirable in themselves provided they do not swing off into mere amusements, become improper and destructive in natural areas dedicated to the public weal.

The act of March 1, 1872, establishing Yellowstone National Park, sets the area apart as “a pleasuring ground for the benefit and the enjoyment of the people,” demanding at the same time “the preservation, from injury or spoliation of all timber, mineral deposits, natural curiosities or wonders within said park and their retention in their natural condition.”

The difficult, and, of course, ceaseless task of the National Park Service is to harmonize these two conflicting objects of our desire: use and preservation.

During the park season (1937) of less than 100 days the number of visitors in Yellowstone and Grand Teton reached a total of 634,242 persons. Similar is the situation in other public areas, be they National or State parks and forests.

The peak load in our great national parks, frequently stimulated artificially, is all out of proportion to existing equipment, and demands additional equipment too costly to be carried during the dormant period of 70 percent of the year.

To find fault is as easy as it is unproductive of betterment. Some of our best friends, earnest and sincere men and women have indulged in it. Many times they were just as correct in their diagnosis of prevailing ailment as they were lacking in proposals for cure.

Faults there are, because they are practically prescribed by law and ordinance, leaving no choice to the executive officer. “Condemn the fault, and not the actor of it,” is a good suggestion found in “Measure for Measure.”

What we have noted in the broad field of conservation of course holds equally good in our Park Service, viz the crying need of modernization of our laws and regulations instead of forcing compromises and more or less honest and effective patchwork by way of attempted readjustment upon the system.

Checks and balances are highly desirable in an uncertain world of popularly elected administrators but only so if they serve their purpose, not if they "frcezc" the wheels of salutary advance.

Under prevailing conditions the Park Service is tied hand and foot, and in consequence cannot render the service which it is capable and ready to give and to which the citizen is entitled.

The casual visitor is apt to see only the obvious in Park service; he does not know the intense labor of naturalist, engineer, superintendent or other members of the staff to maintain as much as is in their power natural balances and still make possible a high degree of service. But these men know that every visitor unwillingly on his part levies a heavy tax on natural life. The tourist and his family admire bears, buffaloes, and elk and he is proud that his Government protects these magnificent creatures. But what only a few know is that this protection under quasi artificial biologic conditions has increased the number of elk and buffalo beyond existing food supply, while the bear has definitely put himself on public relief and acts accordingly.

Alas! there are still more worries for the park administrator. Particularly the Concessions: this vast and intricate system of housing, transporting, and feeding multitudes reaching in spots the half million mark or over and still growing. Taking care of this number 12 months in the year in settled communities is one thing; doing it for a little more than 3 months in the mountains far away from the base of supplies, quite another.

These concessions, like most other human institutions, lag behind the times and for that reason the current system of concessions has become a sore spot. It is outmoded, and belongs to the time of sweeping skirts, leg o' mutton sleeves, horsedrawn buses. It is part of an era when the automobile was not, and circumspect railroad companies made everybody very much at home in the park, themselves notably included. As a phase in the upbuilding of the property at a period when only a selected clientele could be appealed to, it was in keeping with the time. Today it is no more. Travel and hotel life, like everything else, have changed, and so, of course, have park needs. That the error was made in the first place is easily understood, but that it was not corrected long ere this, now constitutes a weakness in the functional set-up and an irritating interference with proper park management. That error was to permit private capital to erect their own buildings on public land. The resulting situation is neither fair to the Government, nor to the concessionaires, nor to the public and should be changed in justice to all concerned. In this place it is

proper to give the park concessionaires due credit for their ability and capacity, some of them being indeed superior operators. The fault lies not with them but in a system which unwittingly is in constant conflict with all other park interests, forming, as it does, a State within a State.

The manifold park interests, expressing the widely extended park uses, are of organic growth and were not thought of in the original set-up. They came about largely after the organization of the National Park Service in 1916 as part of a plan to give adequate opportunity for more receptive enjoyment through a better knowledge and understanding of the environment. Nature guides, museums, lectures (inspirational or on subjects of related flora, fauna, geology, archaeology and history), park museums, pamphlets, maps, and many other features are just a few of the supporting materials for park appreciation. In fact, this "pleasuring ground of the people" is beginning to deserve its name. There will be more not less demand, reasonable or otherwise, on the part of the public for increased service, which means increased cost for needed personnel and equipment, and increased strain on the landscape.

Of course all of this will upset Nature's balances more and more. It will have another very undesirable effect. The bringing together of hundreds of thousands of people in a comparatively small space and short season might easily have in its wake the production of the same undesirable conditions that prevail in places of permanent conflux of dense population, namely the industrial city. In other words, in order to take care of the mass of people who rush in on us, water, food, shelter and quarters, garbage reduction and sewage disposal of necessity will become inadequate and as a result we might be headed for slums: Park slums in this case. Instead of further expansion which after all has to be paid for by somebody we should have retrenchment and not attempt the impossible in the provision of all kinds of amusements that like to travel under the protective coloring of recreation.

In park work, both National and State, we need more thoughtful purists than reckless expansionists and showmen, i. e., we need them if we want to keep our magnificent heritage in scenery and wildlife in such a condition under which Nature may carry out its own laws. I am not inclined to wax petulant, but I have seen through a long line of years the encroachment of artificialities in places which we had sworn to hold sacred. When a swing band plays Chopin's "Funeral March" the passionate strains have lost their meaning. It has just become the funeral march of good taste and decency.

When new properties are taken over, such as the glorious Olympic Mountain region, we have promised ourselves not to repeat present errors. That confession in itself is straightforward and simple enough. The difficulty lies in making plans and forming a policy for the administration of this and other new properties in such a way as to avoid the first *faux pas* which leads off in the direction of more and

more concessions and pitfalls in administration and management. The great Augustus said, *Principiis obsta*. That means, "To be safe, resist the beginnings."

I have not the space and you certainly not the patience to listen to more detail on our interference with Nature's balances, but if we are both minded to protect and to preserve our marvelous heritage in scenic wonders we must find better and more fitting methods of "concessions" and their management.

In new properties the service areas should be built on the outer edge, not within the property. Highways should give way to simple park roads, not for use by private automobile. Traditional pack train service should be encouraged, likewise transportation to isolated camp centers furnished. From here, guides would lead off in exploration of wild country that has a chance to remain wild. Construction and management of the various service areas

might be undertaken by voluntary associations under control of the National Park Service, it being understood that any structure or nonstructural improvement automatically becomes the property of the National Park Service.

A similar method for the better protection of the scenery and of wildlife could be adopted in the old properties. In Yellowstone, since I have used this, the oldest of our great parks, as an example, we might build a new vast service area west of the west entrance on the Madison River to provide for the rushing mass of gas buggy itinerants who need recuperation and recreation after the exhausting strain of sightseeing. It should work like a molasses jug in July, catching interested parties, and it would return the park to those who came to adore. Incidentally, it would give Dame Nature a new breathing spell and a new lease on life, enabling her to restore her own balances.

STATE PARK ADMINISTRATIVE AGENCIES

ALABAMA: Department of Conservation, Dr. Walter B. Jones, director; W. G. Lunsford, chief, Division of State Parks, Monuments, and Historical Sites, Montgomery.

ARIZONA: University of Arizona, president, Tucson (Saguaro Forest State Park). State Game and Fish Commission, George Wrench, chairman; William Sawtelle, State Game Warden, Phoenix.

ARKANSAS: State Park Commission, Dr. W. T. Hardison, chairman; S. G. Davies, Director of State Parks, State Capitol, Little Rock.

CALIFORNIA: Department of Natural Resources, Richard Sachse, director; Darwin William Tate, chief, Division of Parks, 417 Montgomery Street, San Francisco.

COLORADO: State Park Board, State Capitol, Denver.

CONNECTICUT: State Park and Forest Commission, Arthur V. Parker, General Superintendent of Parks, Hartford.

DELAWARE: State Park Commission, Dover. State Forestry Commission, Dover.

FLORIDA: Florida Forest and Park Service, H. J. Malsberger, director, State Forests and Parks, Tallahassee.

GEORGIA: Department of Natural Resources; E. L. Bothwell, acting director, Division of State Parks, Historic Sites, and Monuments, Atlanta.

IDAHO: Department of Public Works, H. R. Flint, acting commissioner, Boise.

ILLINOIS: Department of Public Works and Buildings, Charles P. Casey, director; George H. Luker, superintendent, Division of Parks, Springfield.

INDIANA: Department of Conservation, Virgil M. Sim-

mons, commissioner; Charles R. DeTurk, director, Division of State Parks, Lands, and Waters, Indianapolis.

IOWA: State Conservation Commission, M. L. Hutton, director; V. W. Flickinger, chief, Division of Lands and Waters, Des Moines.

KANSAS: Forestry, Fish and Game Commission, Guy D. Josseland, director, Pratt.

KENTUCKY: Department of Conservation, Bailey P. Wootton, director, Division of Parks, Frankfort.

LOUISIANA: State Park Commission, E. S. Clements, chairman; Nicole Simoneaux, secretary, New Orleans.

MAINE: State Park Commission, Raymond E. Rendall, secretary, Alfred. Commissioner of Inland Fisheries and Game, the Attorney General, and Forest Commissioner, Waldo N. Seavey, Augusta (Baxter State Park).

MARYLAND: Department of Forestry, Karl E. Pfciffer, director, Division of State Parks, 1411 Fidelity Building, Baltimore.

MASSACHUSETTS: Department of Conservation, Ernest J. Dean, commissioner, 20 Somerset Street, Boston. Metropolitan District Commission, secretary, 20 Somerset Street, Boston. Mount Everett State Reservation Commission, George T. Hamilton, secretary, 29 Elliott Street, Springfield. Mount Greylock State Reservation Commission, Archie K. Sloper, secretary, Lanesborough. Mount Sugar Loaf State Reservation Commission, Samuel U. Streeter, chairman, Greenfield. Mount Tom State Reservation Commission, Charles W. Bray, chairman, Chicopee Falls. Purgatory Chasm State Reserva-

- tion Commission, Herbert L. Ray, superintendent, Sutton. Wachusett Mountain State Reservation Commission, Charles D. Briggs, secretary, Princeton. Walden Pond State Reservation Commission, Walter C. Wardwell, chairman, Cambridge.
- MICHIGAN: Department of Conservation, P. J. Hoffmaster, director; Walter J. Kingscott, superintendent, Division of Parks, Lansing.
- MINNESOTA: Department of Conservation, Dr. William L. Strunk, commissioner; Harold W. Lathrop, director, Division of State Parks, St. Paul.
- MISSOURI: State Park Board, Irwin T. Bode, director, Jefferson City.
- MISSISSIPPI: State Forestry Commission, Fred B. Merrill, State Forester; State Board of Park Supervisors, J. H. Fortenberry, Director of Parks, Jackson.
- MONTANA: State Park Commission, Rutledge Parker, State Forester and State Park Director, Missoula.
- NEBRASKA: State Game, Forestation and Parks Commission, Frank B. O'Connell, director, Lincoln.
- NEVADA: State Park Commission, Robert A. Allen, Superintendent of State Parks, Carson City.
- NEW HAMPSHIRE: State Forestry and Recreation Commission, John H. Foster, State Forester; Russell B. Tobey, assistant in charge of State Parks, Concord.
- NEW JERSEY: Department of Conservation and Development, C. P. Wilber, director and chief, Division of Forests and Parks, Trenton. High Point Park Commission, John J. Gibbons, executive secretary, Sussex.
- NEW MEXICO: State Park Board, Burton G. Dwyer, secretary; C. E. Hollied, chairman and superintendent of State Parks, Box 448, Sante Fe.
- NEW YORK: State Conservation Department, Lithgow Osborne, commissioner; James F. Evans, Director of Parks and Secretary, State Council of Parks; William G. Howard, director, Division of Lands and Forests, Albany (Adirondack and Catskill Preserves). Allegany State Park Commission, M. E. Mercer, executive secretary, Red House. American Scenic and Historic Preservation Society, secretary, 287 Convent Avenue, New York. Central New York State Parks Commission, Leonard L. Huttleston, executive secretary, Binghamton. Finger Lakes State Park Commission, Carl Crandall, secretary-engineer, Ithaca. Genesee State Park Commission, Chas. A. Van Arsdale, executive secretary, Castile. Long Island State Park Commission, Arthur E. Howland, chief engineer-general manager, Babylon, Long Island. Niagara Frontier State Park Commission, A. B. Cole, secretary, Niagara Falls. Palisades Interstate Park Commission, Kenneth Morgan, chief engineer-general manager; ¹ Frederick C. Sutro, executive director, State Office Building, New York. Taconic State Park Commission, Paul T. Winslow, executive secretary, Staatsburg. Thousand Islands State Park Commission, S. H. Davenport, executive secretary, Watertown. Westchester County Park Commission, James W. Howarth, secretary, White Plains.
- NORTH CAROLINA: Department of Conservation and Development, R. Bruce Etheridge, director; J. S. Holmes, State Forester; Thomas W. Morse, Superintendent of State Parks, Box 231, Raleigh.
- NORTH DAKOTA: State Parks Committee of State Historical Society, Russell Reid, superintendent, Bismarck.
- OHIO: Division of Conservation and Natural Resources, Don Waters, commissioner; W. R. Wheelock, chief, Bureau of Inland Lakes and Parks, Columbus. Division of Forestry, O. A. Alderman, State Forester, Wooster. State Archaeological and Historical Society, Curator of State Memorials, Columbus. Akron Metropolitan Park Board, H. S. Wagner, director-secretary, Courthouse, Akron (Virginia Kendall State Park). Defiance County Metropolitan Park Board, County Courthouse, Defiance (Independence State Park).
- OKLAHOMA: State Planning and Resources Board, Glen R. Durrell, State Forester and Director, Division of State Forests; Campbell Cameron, assistant in charge of State Parks, Oklahoma City.
- OREGON: State Parks Commission, Samuel H. Boardman, Superintendent of State Parks, Salem.
- PENNSYLVANIA: Department of Forests and Waters, G. Albert Stewart, secretary; John R. Williams, chief, Bureau of Parks, Harrisburg.
- RHODE ISLAND: Department of Agriculture and Conservation, Dr. G. W. Breed, director; Ernest K. Thomas, administrator, Office of Forests and Parks, Goddard Memorial Park, East Greenwich.
- SOUTH CAROLINA: State Forestry Commission, H. A. Smith, State Forester; R. A. Walker, in charge, Division of State Parks, Columbia.
- SOUTH DAKOTA: South Dakota Park Board, E. B. Adams, chairman, Hot Springs; C. T. Bates, superintendent, Hermosa.
- TENNESSEE: Department of Conservation, J. Chas. Poc, commissioner; Robert D. Maxwell, acting director, Division of State Parks, Nashville.
- TEXAS: State Parks Board, Wendell Mayes, chairman, Brownwood; Frank D. Quinn, executive secretary, Austin.
- UTAH: State Board of Park Commissioners, Dr. George Thomas, chairman, Salt Lake City. State Fish and Game Department, Newell B. Cook, commissioner, Salt Lake City.
- VERMONT: State Board of Conservation and Development, Perry H. Merrill, State Forester, Montpelier.
- VIRGINIA: Virginia Conservation Commission, N. Clarence Smith, chairman; Randolph Odell, acting director, Division of Parks, Richmond.

¹ Succeeds Wm. A. Welch, who remains as full time consultant.

WASHINGTON: State Parks Committee, W. G. Weigle, Superintendent of State Parks, Seattle.
WEST VIRGINIA: State Conservation Commission, H. W. Shawhan, director; Linn Wilson, chief, Division of Parks, Charleston.

WISCONSIN: State Conservation Commission, H. W. MacKenzie, director; C. L. Harrington, Superintendent of Forests and Parks, Madison.
WYOMING: State Park Commission, Winifred S. Kienzle, Deputy Land Commissioner, Cheyenne.

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